

SERVICE MANUAL

(without price)

ELECTRONIC CASH REGISTER

CE-300 (EX-247)

JANUARY 1997



Printer Model : MD-910

CASIO®

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1. SPECIFICATIONS

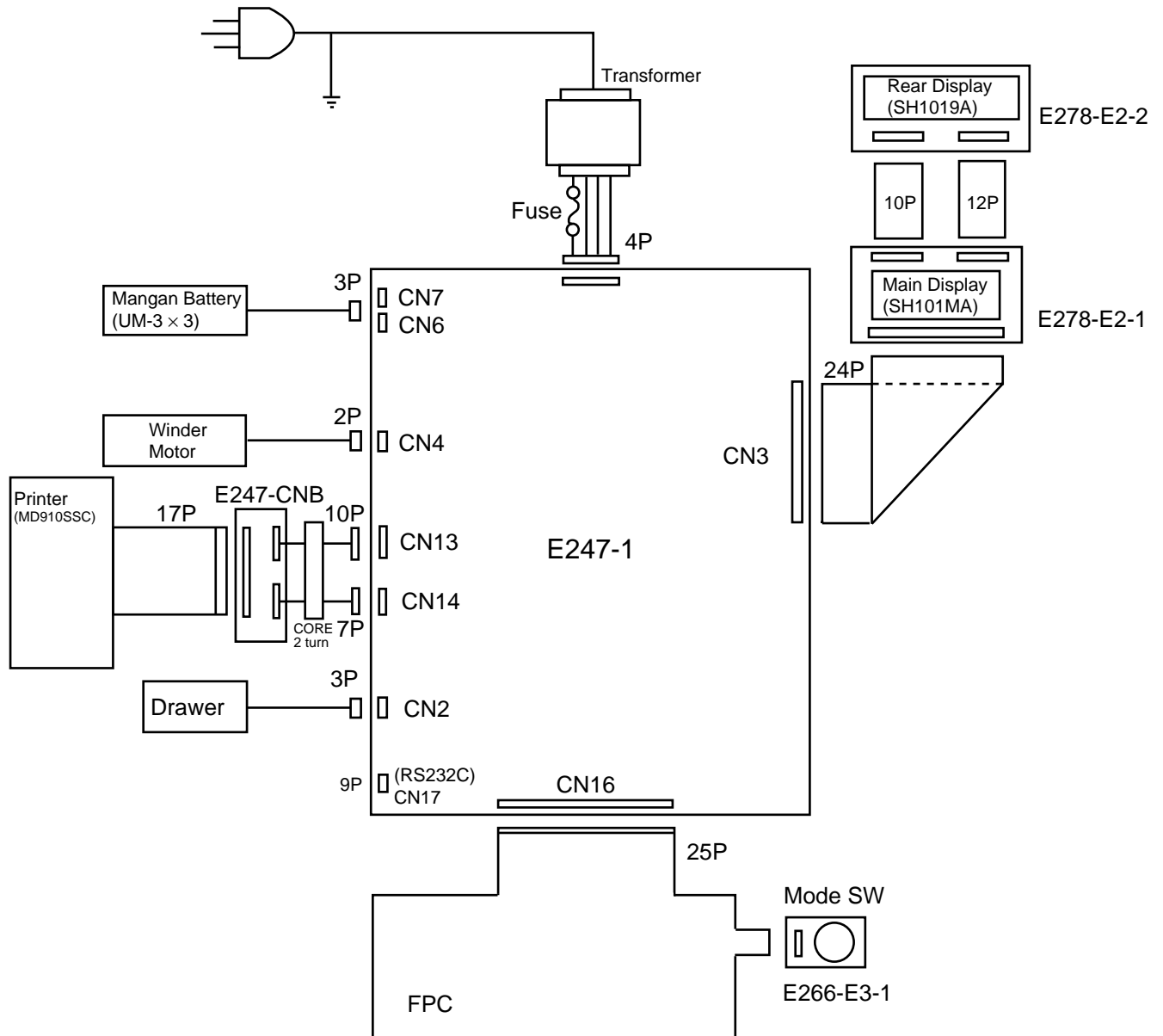
Power consumption			120 V	220 V	230 V	240 V
	In operation	Max.	0.28 A	0.17 A	0.16 A	0.15 A
		Stand by	0.14 A	0.09 A	0.08 A	0.07 A
	Mode SW OFF	Max.	0.12 A	0.08 A	0.07 A	0.06 A
Memory protection	Backup battery	Mangan Battery UM-3 × 3 pcs.				
	Backup period	1 year (25 °C)				
	Battery life	Replace the battery every 1 year.				
Memory capacity	32 KB	CXK58257AP-70/10L				
Clock and calender	Accuracy	Within ±30 sec. per month (25 °C)				
	Auto calender	Effective until 2099 A.D.				
Environment	Operating temperature	0 °C ~ 40 °C				
	Operating humidity	10 % ~ 90 %				
	Storage temperature	-25 °C ~ 65 °C				
	Storage humidity	10 % ~ 95 %				
Printer	Model	MD-910-SSC				
	Print method	Dot matrix printing				
	Print digits	24 digits				
	MCBF	1,500,000 lines				
Ink cassette	Life	250,000 characters				
Roll paper	Type	Fine-quality paper or Pressure-sensitive copy paper				
	Size	57.5 ±0.5 mm				
	Roll diameter	83 mm or less				

2. INITIALIZE (MAC) OPERATION

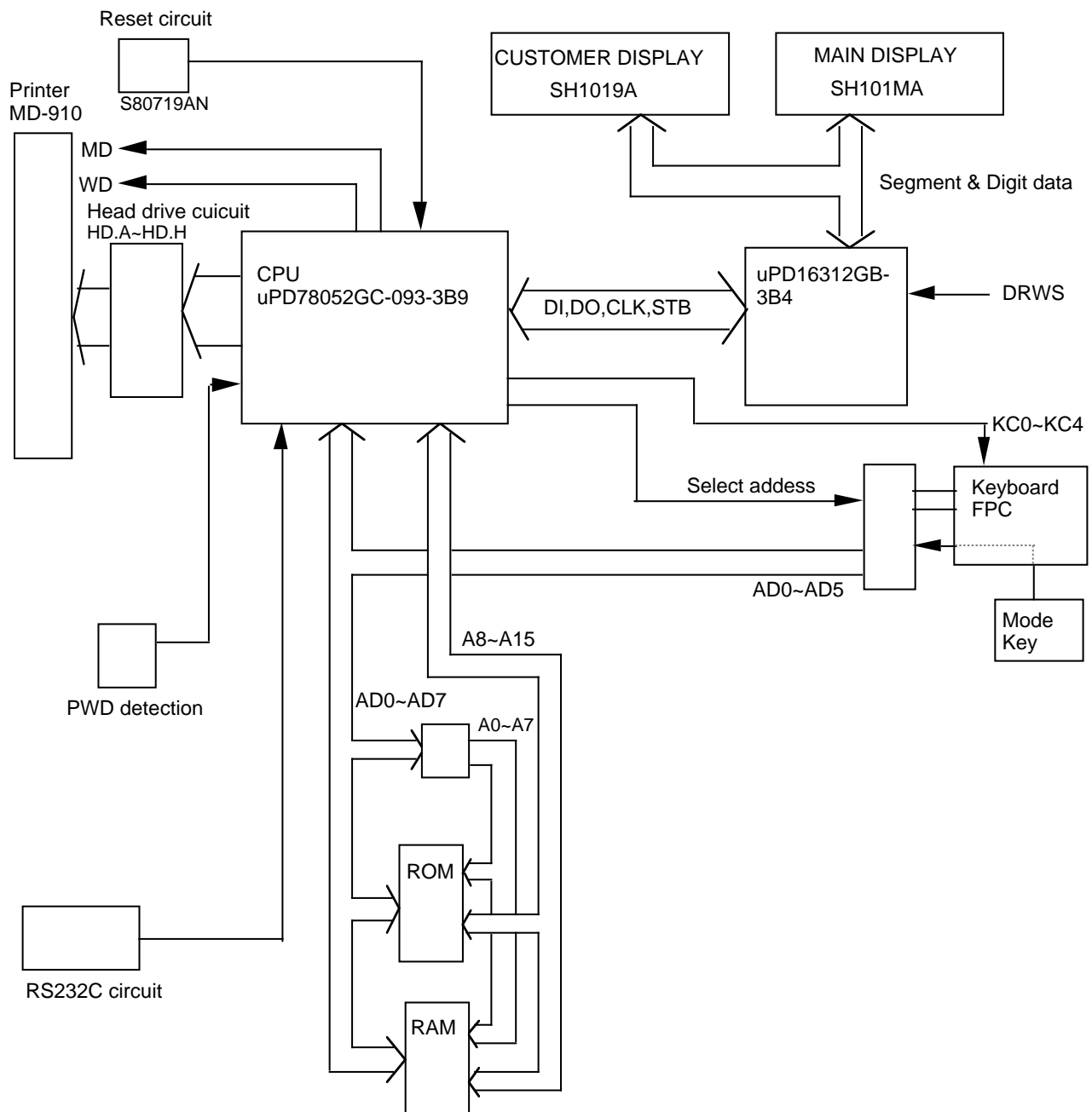
1. Set the mode switch to "OFF" position.
2. Pressing the "FEED" button and turn the mode switch to "PRG" position.
3. Release the "FEED" button.
4. Press "#2" key (Normally "SUB TOTAL" key).
5. Initialize operation is executed.

3. BLOCK DIAGRAM

3-1. PCB connection



3-2. Block diagram (circuit)



4-1. Power supply circuit

[illegible]

Q2: Voltage detection transistor

Measurement position	A	B	C	D
Voltage (V)	12.5V	5.3V	6.2V	2.47V

4-2. CPU (uPD78052GC-093-3B9)

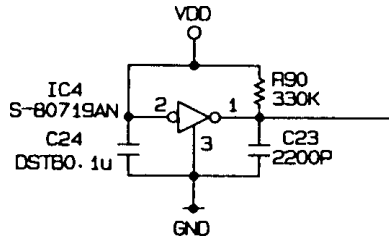
Pin No.	Signal	Description	In/Out	Status of Power On	Status of Power OFF
1	FB3	Not used	—	—	—
2	FB4	RAM bank 3	Out	High	High
3	FB5	RAM bank 4	Out	High	High
4	AVSS	GND	—	GND	GND
5	PGM	Not used	—	—	—
6	RAM	Chip select signal for RAM	Out	High	Low
7	AVREF	VDD	—	5 V	5 V
8	RXD	Receive data	In	High	High
9	TXD	Send data	Out	High	High
10	WD	Winder motor drive signal	Out	Low	Low
11	DI	Data signal from uPD16312	In	Pulse	High
12	DO	Data signal to uPD16312	Out	Pulse	High
13	CLK	Clock signal for uPD16312	Out	Pulse	High
14	STB	Data strobe signal for uPD16312	Out	Pulse	High
15	KC0	Key common signal (KC0)	Out	Pulse	High
16	KC1	Key common signal (KC1)	Out	Pulse	High
17	KC2	Key common signal (KC2)	Out	Pulse	High
18	KC3	Key common signal (KC3)	Out	Pulse	High
19	AD0	Address / Data signal (AD0)	In/Out	Pulse	High
20	AD1	Address / Data signal (AD1)	In/Out	Pulse	High
21	AD2	Address / Data signal (AD2)	In/Out	Pulse	High
22	AD3	Address / Data signal (AD3)	In/Out	Pulse	High
23	AD4	Address / Data signal (AD4)	In/Out	Pulse	High
24	AD5	Address / Data signal (AD5)	In/Out	Pulse	High
25	AD6	Address / Data signal (AD6)	In/Out	Pulse	High
26	AD7	Address / Data signal (AD7)	In/Out	Pulse	High
27	A8	Address signal (A8)	Out	Pulse	High
28	A9	Address signal (A9)	Out	Pulse	High
29	A10	Address signal (A10)	Out	Pulse	High
30	A11	Address signal (A11)	Out	Pulse	High
31	A12	Address signal (A12)	Out	Pulse	High
32	A13	Address signal (A13)	Out	Pulse	High
33	VSS	GND	—	GND	GND
34	A14	Address signal (A14)	Out	Pulse	High
35	A15	Address signal (A15)	Out	Pulse	High
36	INIT	PAD2 status	—	—	—
37	VPP	PAD1 status	—	—	—
38	DSR	Data set ready signal	In	High	High
39	KC4	Key common signal (KC4)	Out	Pulse	High
40	RD	Output enable signal of RAM/ROM (RD)	Out	Pulse	High
41	WR	Write enable signal of RAM (WR)	Out	Pulse	High
42	RA14	Address signal of ROM (Bank 0)	Out	High	High
43	ASTB	Latch enable for Address decoder (ASTB)	Out	Pulse	Low
44	KI12	Key input signal (KI12)	In	High	High
45	KI13	Key input signal (KI13)	In	High	High
46	RA16	Address signal of ROM (Bank2)	Out	High	High
47	RA15	Address signal of ROM (Bank 1)	Out	High	High
48	MD	Motor drive signal of printer (MD)	Out	Low	Low
49	DRW	Drawer drive signal (DRW)	Out	Low	Low
50	BUZ	Buzzer signal (BUZZ)	Out	Low	Low
51	FD	Paper feed signal of printer (FD)	Out	Low	Low
52	HD.A	Head drive signal of printer (HD.A)	Out	Low	Low
53	HD.B	Head drive signal of printer (HD.B)	Out	Low	Low
54	HD.C	Head drive signal of printer (HD.C)	Out	Low	Low
55	HD.D	Head drive signal of printer (HD.D)	Out	Low	Low

Pin No.	Signal	Description	In/Out	Status of Power On	Status of Power OFF
56	HD.E	Head drive signal of printer (HD.E)	Out	Low	Low
57	HD.F	Head drive signal of printer (HD.F)	Out	Low	Low
58	HD.G	Head drive signal of printer (HD.G)	Out	Low	Low
59	HD.H	Head drive signal of printer (HD.H)	Out	Low	Low
60	RESET	Reset signal (RESET)	In	High	High
61	DP	Dot pulse form printer (DP)	In	Low	High
62	RP	Reset pulse from printer (RP)	In	High	High
63	OFF	Mode key status (OFF)	Out	High	Low
64	PWD	Power down signal (PWD)	In	Low	High
65	RB0	Address signal for RAM (Bank 0)	Out	High	High
66	RB1	Address signal for RAM (Bank 1)	Out	High	High
67	RB2	Address signal for RAM (Bank 2)	Out	High	High
68	VDD	VDD	—	5 V	5 V
69	X2	System clock (5 MHz)	In	Pulse	High
70	X1	System clock (5 MHz)	In	Pulse	High
71	IC	GND	—	GND	GND
72	XT2	Sub system clock (32.768 KHz)	In	Pulse	Pulse
73	XT1	Sub system clock (32.768 KHz)	In	Pulse	Pulse
74	AVDD	VDD	—	5 V	5 V
75	AVREF0	VCC	—	GND	GND
76	BAT	Low battery signal	In	High	High
77	VPP.S	VPP detection signal (VPP.S)	In	Low	Low
78	FB0	Address signal of Fiscal ROM bank 0	Out	High	High
79	FB1	Address signal of Fiscal ROM bank 1	Out	High	High
80	FB2	Address signal of Fiscal ROM bank 2	Out	High	High

4-3. Display controller (uPD16312GB-3B4)

Pin No.	Signal	Description	In/Out	Status of Power On	Status of Power OFF
1	SW1	Not used (GND)	—	GND	GND
2	SW2	Not used (GND)	—	GND	GND
3	SW3	Not used (GND)	—	GND	GND
4	SW4	Not used (GND)	—	GND	GND
5	DOUT	Data out signal to CPU	Out	High	High
6	DIN	Data in signal from CPU	In	Pulse	High
7	VSS	GND	—	GND	GND
8	CLK	Clock signal (CLK)	In	Pulse	High
9	STB	Data strobe signal (STB)	In	Pulse	High
10	KEY1	Not used	—	—	—
11	KEY2	Not used	—	—	—
12	KEY3	Drawer sensor signal (DRW.S)	In	High	High
13	KEY4	VCC	—	5 V	5 V
14	VDD	VCC	—	5 V	5 V
15	SEG1	Display segment signal (Sa)	Out	Pulse	Low
16	SEG2	Display segment signal (Sb)	Out	Pulse	Low
17	SEG3	Display segment signal (Sc)	Out	Pulse	Low
18	SEG4	Display segment signal (Sd)	Out	Pulse	Low
19	SEG5	Display segment signal (Se)	Out	Pulse	Low
20	SEG6	Display segment signal (Sf)	Out	Pulse	Low
21	SEG7	Display segment signal (Sg)	Out	Pulse	Low
22	SEG8	Display segment signal (Sdp)	Out	Pulse	Low
23	SEG9	Display segment signal (Str)	Out	Pulse	Low
24	SEG10	Display segment common signal (Scom)	Out	Pulse	Low
25	SEG11	Not used	—	Low	Low
26	SEG12	Not used	—	Low	Low
27	VEE	Power for display (-VN)	—	-32 V	-32 V
28	GRD10	Display digit signal (G10)	Out	Pulse	Low
29	GRD9	Display digit signal (G9)	Out	Pulse	Low
30	GRD8	Display digit signal (G8)	Out	Pulse	Low
31	GRD7	Display digit signal (G7)	Out	Pulse	Low
32	GRD6	Display digit signal (G6)	Out	Pulse	Low
33	GRD5	Display digit signal (G5)	Out	Pulse	Low
34	GRD4	Display digit signal (G4)	Out	Pulse	Low
35	GRD3	Display digit signal (G3)	Out	Pulse	Low
36	GRD2	Display digit signal (G2)	Out	Pulse	Low
37	GRD1	Display digit signal (G1)	Out	Pulse	Low
38	VDD	VCC	—	5 V	5 V
39	LED4	Not used	—	Pulse	Low
40	LED3	Not used	—	Pulse	Low
41	LED2	Not used	—	Pulse	Low
42	LED1	Not used	—	Pulse	Low
43	VSS	GND	—	GND	GND
44	OSC	System clock (500 KHz)	In	Pulse	Pulse

4-4. Initilize IC (Reset circuit)

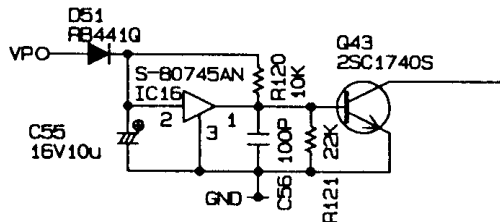


VDD: Voltage of memory protection battery

To Pin No.60 of CPU

When the voltage level at Pin No.60 of CPU is not stabilized, CPU does not work properly in rare case. Therefore, this machine uses the initialize IC for stabilizing the voltage. Even the voltage level of VDD (Pin No.2) is changed, Pin No.1 of initialize IC outputs stabilized 5 volts. When the VDD voltage become less than 1.9 V, the initialize IC send a reset signal to CPU.

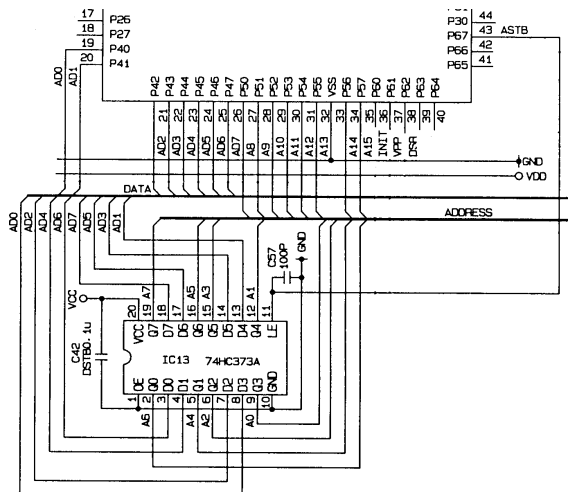
4-5. Power down detection circuit (PWD)



To Pin No.64 of CPU

When the VP voltage become less than 4.8 V, the pin No.1 of IC5 become "Low" level. Then, the transistor Q44 become OFF. When Q44 become OFF, the voltage level of pin No.64 of CPU changes to "High" level from "Low". Then, CPU knows power failure.

4-6. Address latch circuit



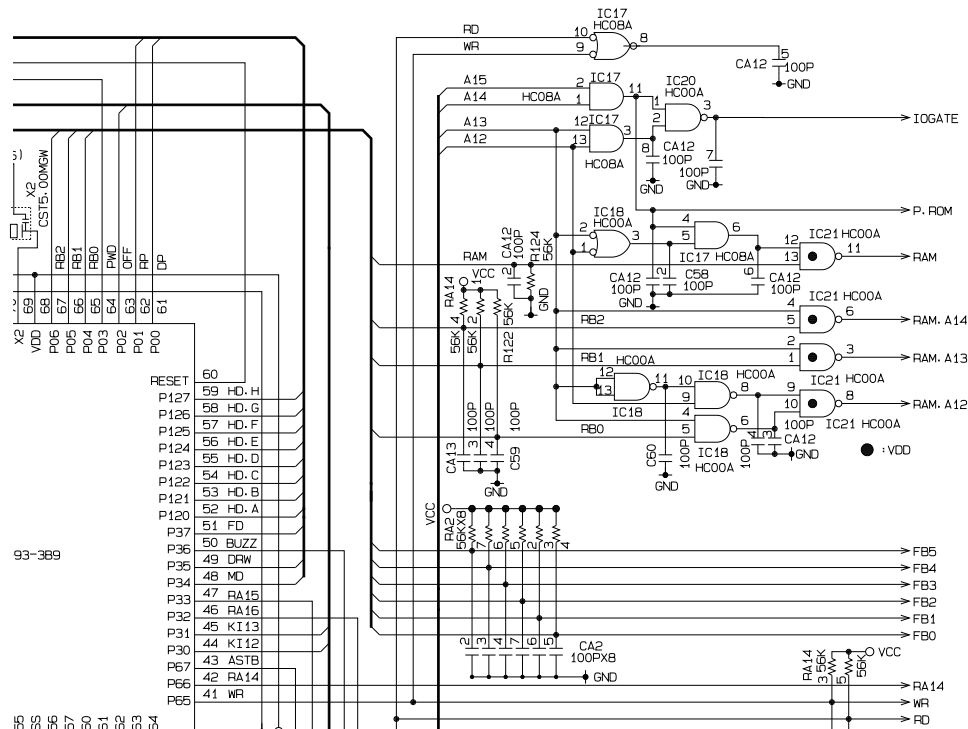
CPU uses 8 port (AD0 ~ AD7) for address bus and data bus.

To select the address, CPU use the IC13. CPU send the address to IC13, and send ASTB signal at same time.

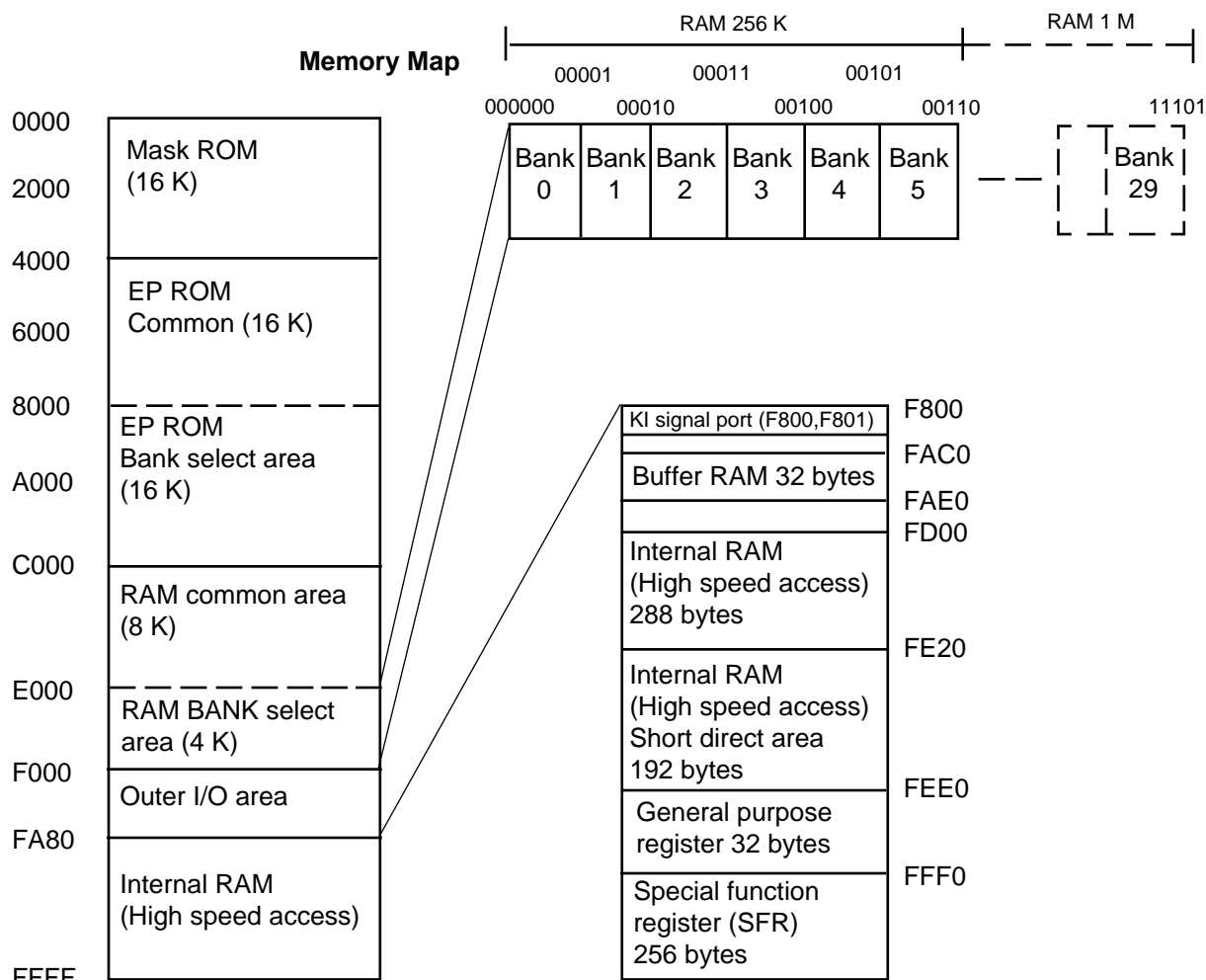
Then, IC13 store the address and output the address immediately.

In this way, CPU select the address and data signal.

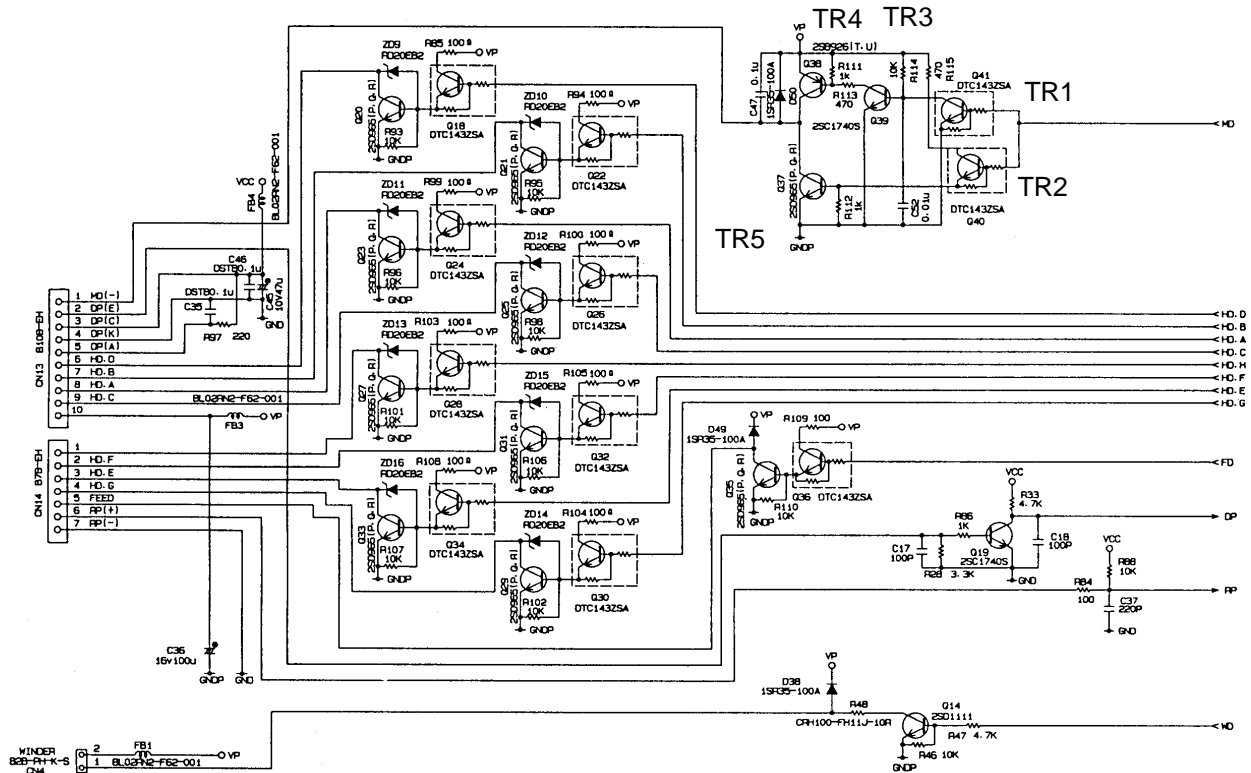
4-7. RAM / ROM bank selection circuit



This circuit is used for address decoder for memory.



4-8. Head drive circuit for printer



Motor drive circuit

Normally, the transistor of motor drive circuit is following condition.

TR1, TR2, TR5 : OFF
 TR3, TR4 : ON
 MD (-) signal : VP level

When the CPU want to rotate the motor, CPU change the MD signal to "High" from "Low". Then, TR1, TR2 and TR5 are become ON and MD (-) signal is become GND level, and then motor is rotated.

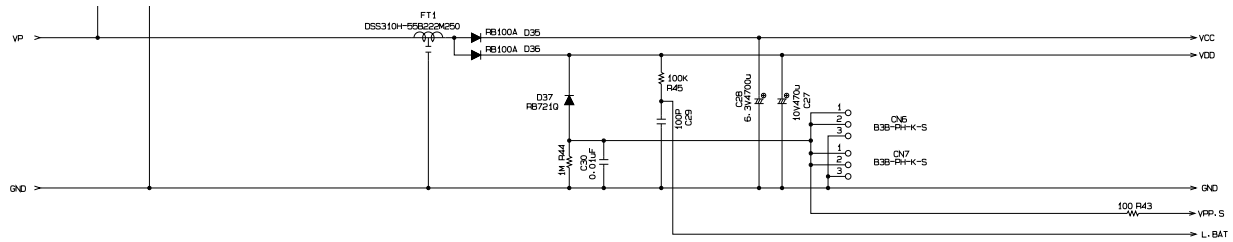
Head drive circuit

When the CPU wants to print, CPU send "High" signal from HD.A ~ HD.H terminal. This signal goes to printer unit, and then print.

RP: Reset pulse from printer
 DP: Dot pulse from printer

4-9. VPP sensor circuit

Protection circuit



To prevent the circuit breakage, the protection circuit watches the voltage level of VCC, VDD and VPP.

When the each voltage level is more than following condition, this circuit cuts the voltage.

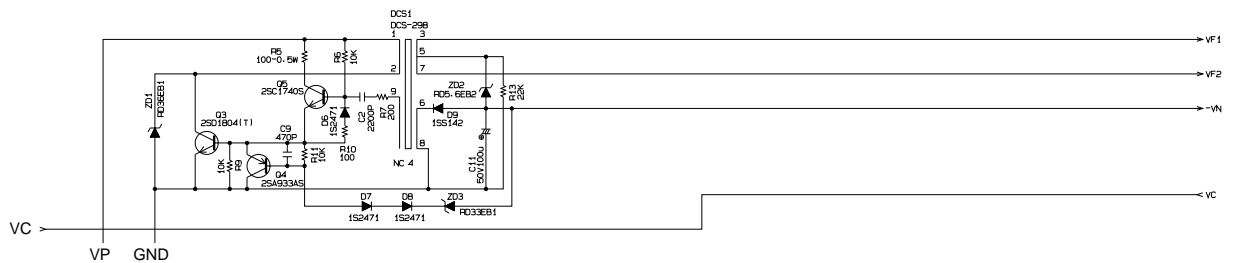
VCC,VDD: In case these voltages are become over voltage, this circuit outputs “SCR” signal(High signal) and burn out the fuse.

VPP: In case the VPP voltage is more than 15 V or less than 13.9 V, the “VPP.S” level is inverted and CPU cut the “VPP.ON” signal.

Detection voltage level (Unit: V)

VCC \geq +6.5 V
VDD \geq +6.5 V
+13.9 V \leq VPP \leq 15.0 V

4-10. Power supply circuit for display



This circuit is making the power for display tube.

Voltage level: -VN Est. -31.2 V
VF1 - VF2 Est. AC4.85 V

5. DIAGNOSTIC

5-1. To start the diagnostic program

1. Set the mode switch to “OFF” position.
2. Pressing the “FEED” button and turn the mode switch to “PRG” position.
3. Release the “FEED” button.
4. Input “9999900000” and press “ST” (“#2” key).
5. Diagnostic program is executed.

5-2. Check item

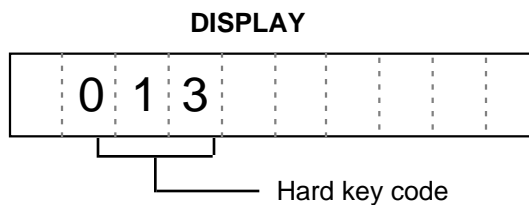
The following test can be checked in the diagnostic test.

1. Key code test
2. Switch status test
3. Individual function test.

5-3. Operation of each test

1. Key code test

When pressing a key, the machine displays the following key code.



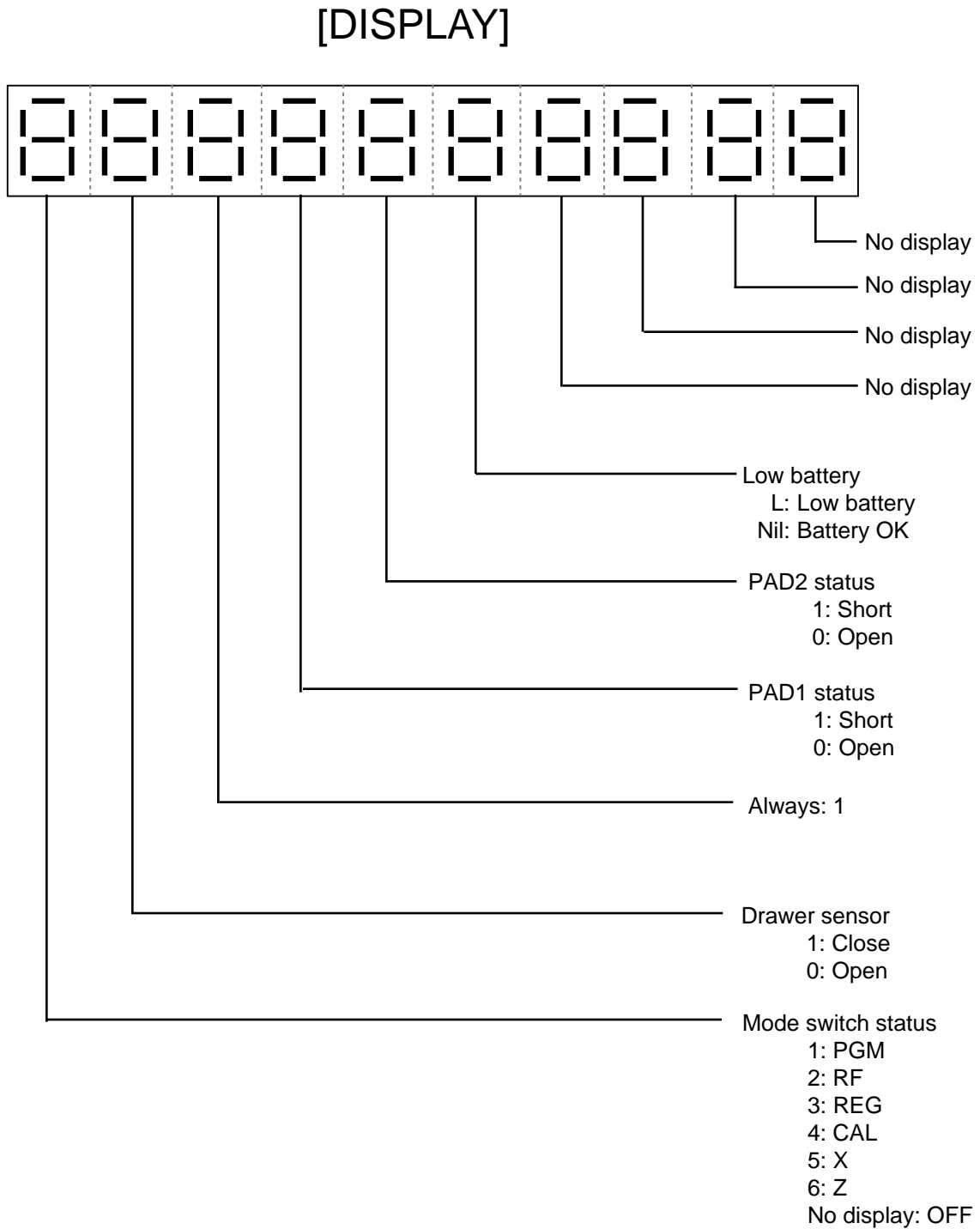
HARD KEY CODE TABLE

						048	042	036	030	024	018
						047	041	035	029	023	017
FEED	055	051	7	8	9	046	040	034	028	022	016
058	054	050	4	5	6	045	039	033	027	021	015
057	053	049	1	2	3	044	038	032	026	020	014
056	052	C	0	011	012	043	037	031	025	019	013

“020” & “026” buttons are work for “#2” key.

2. Switch status test

Press “C” button, the switch status is appeared on the display.



3. Individual function test

3-1. Series test

“Y” “X” “1” + “#2” key

Y: 0: Normal test
1: Execute next test even if an error happend at ROM check sum

X: 0: Autockecking of RAM capacity
1: 256 Kbit RAM test
2: 1 Mbit RAM test

Execute the following test in order.

1. Display test
2. Check sum test of EP-ROM
3. RAM test
4. Drawer open test
5. Printing test
6. Date and Time test

1. Display test (All segment light on)



2. Ccheck sum test of EP-ROM

Normal end

ROM	SUM	OK
-----	-----	----

XX00: Check sum value

Error end

ROM	E R
-----	-----

XXXX : Check sum value

3. RAM test (Read/Write test)

Normal end receipt

256 Kbit RAM

RAM	32K	R/W	OK
-----	-----	-----	----

1 Mbit RAM

RAM	128K	R/W	OK
-----	------	-----	----

Error end receipt

RAM	32K	E R
-----	-----	-----

YY: Bank
XXXX: Address

4. Drawer open test

5. Printing test

BBBBBBBBBBBBBBBBBBBBBBBBBB

6. Date and Time test

Set the date and time as follows.

Date : 31 / 12 / 96 Time : 25:59

Then, issues a receipt and display the following character.

1	2	3	4	5	6	7	8	9	0
---	---	---	---	---	---	---	---	---	---

3-2. Print test

Input "Y" "X" "2" + "#2" key.

- X: 0: Print the following character continuously.
Printing speed : 45 times / Min.
1: Print the following character, open the drawer and issue a receipt
Printing speed : 25 times / Min.
Drawer open : 5 times / Min.
Receipt issue : 5 times / Min.
- Y: 0: No effect
1: Print the following character without waiting time. (Continuously print)

To stop this test, press any key or turn the mode switch to "OFF" position.

Printing sample:

BBBBBBBBBBBBBB

3-3. RAM read only test

Input "X" "5" + "#2" key.

- X: 0: Read the data from start to end address and issues receipt.
1: Read the data from start to end address continuously until power off.
Brink " - " signal on the display during checking.

Note: Be sure to execute the series test (1 + #2) before this test.

256 Kbit check receipt

RAM	32K	READ	OK
-----	-----	------	----

1 Mbit check receipt

RAM	128K	READ	OK
-----	------	------	----

Display

-									
---	--	--	--	--	--	--	--	--	--

3-4. INIT OPERATION (To set a Factory Default setting)

Input "8" "6" + "#2" key.

The machine is executed a INIT operation according to PAD status.
Set the data and time to "0".
(00-00-00, 00:00:00)

3-5. Voltage check for Memory protection battery

Input "7" + "#2" key.

Display the battery voltage.

To stop this test, press any key or turn the mode switch to "OFF" position.

X	X	X							
---	---	---	--	--	--	--	--	--	--

X.XX: Voltage value

3-6. All character print test

Input "8" + "#2" key.

"8" + "#2": Prints all character on receipt once.

"1" "8" + "#2": Prints all character on receipt continuously.

To stop this test, press any key or turn the mode switch to "OFF" position.

```
# 8
00
10
20 !@#$%^&'()*+,-./
30 0123456789:;<.>?
40 @ABCDEFGHIJKLMNO
50 PQRSTUVWXYZ[\]^_
60 `abcdefghijklmnopqrstuvwxyz
70 _abcdefghijklmnopqrstuvwxyz
80 0123456789:;<.>?
90 @ABCDEFGHIJKLMNO
A0 PQRSTUVWXYZ[\]^_
B0 `abcdefghijklmnopqrstuvwxyz
C0 _abcdefghijklmnopqrstuvwxyz
D0 0123456789:;<.>?
E0 @ABCDEFGHIJKLMNO
F0 PQRSTUVWXYZ[\]^_
BBBBBBBBBBBBBB
```

3-7. Time display test

Input "9" + "#2" key.

Display the time.

To stop this test, press any key or turn the mode switch to "OFF" position.

	2	3	-	5	9	0	0
--	---	---	---	---	---	---	---

3-8. RS232C port test

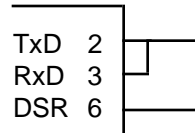
Input "2" "0" "7" + "#2" key.

Execute the RS232C loop back test continuously using loop back connector.
In case an error happens, the machine issues an error receipt then stop this test.

Test description: 1: Level check at DSR signal (Low/High)
2: Send the data (05Ah) from TxD and receive it at RxD terminal.

To stop this test, turn the mode switch to "OFF" position.

Loop back connection:



Normal End

232C	OK
------	----

Error End

232C	ER	X
------	----	---

X: Error code

- 0: Time over
- 1: Over run error
- 2: Framing error
- 3: RXD line data error
- 4: DSR line receive error


5-4. To exit the diagnostic test


To escape the diagnostic test mode, execute "INITIALIZE (MAC) operation".

6. ERROR CODE

6-1. Operation error code

Error codes appear on display whenever you make a mistake during operation.

Error Code	Meaning	Action
E01	Mode switch position changed before finalization.	Return the mode switch to its original setting and finalize the operation.
E08	Registration without entering a clerk number. This error appears only when the clerk control function is activated.	Enter a clerk number.
E27	Transaction cancel buffer full.	Finalize the transaction.
E31	Finalization of a transaction attempted without confirming the subtotal.	Press the  key.
E33	Finalize operation attempted without entering amount tender.	Enter the amount tendered.
E35	Change amount over.	Require small money.
E38	Read/reset operation without declaring cash in drawer. This error appears only when this function is activated.	Perform money declaration.
E94	Printer error.	Turn the power off, and remove jammed paper from the printer.

Press  key and check the appropriate section of this manual for the operation you want to perform.

6-2. System lock code

The following error code appears on display and receipt when the machine is lock up. Execute the Flag MAC or MAC operation to clear these errors.

```
Error code:      Display:  X -----
                  Receipt: X!!!!!!!!!!!!!!!!!!!!
```

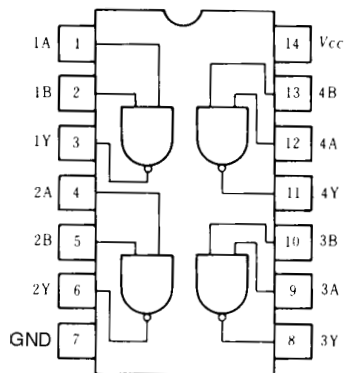
X: Lock code

Error sample: 3!!!!!!!!!!!!!!!!!!!!

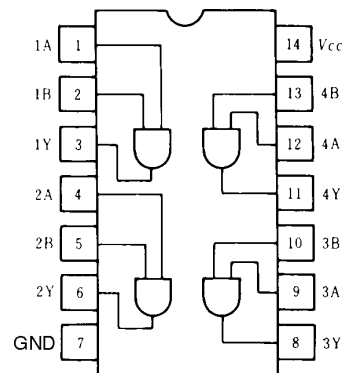
Error code	Error Name	Meaning
1	Sequential trap	The machine try to write to accumulator when the CPU is hung up.
2	Memory write error	Error happens when the CPU write the data to memory.
3	Trap error	Abnormal address
6	Timer error	Interrupt timer error
7	Stack over	Abnormal address or stack pointer has an error
0	Other error	CPU executes wrong jump vector before detect 1, 3 and 6 error code.

7. IC DATA

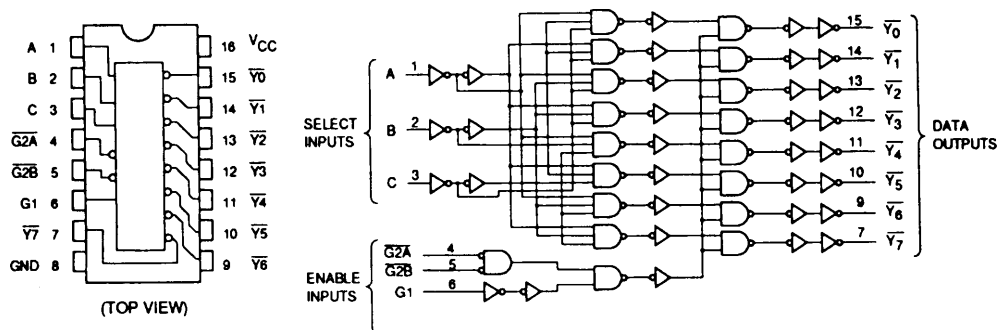
1. TC74HC00AP



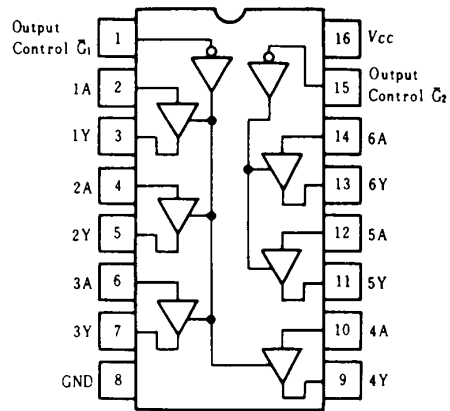
2. TC74HC08AP



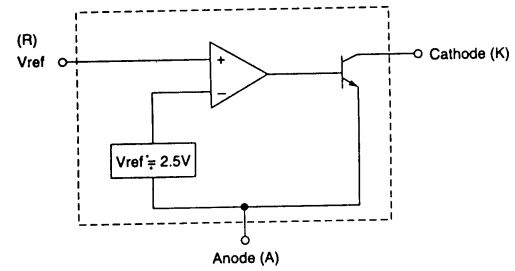
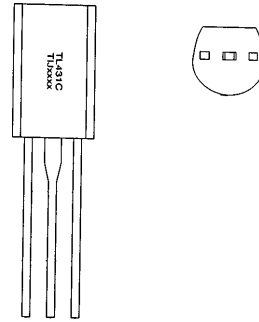
3. TC74HC138



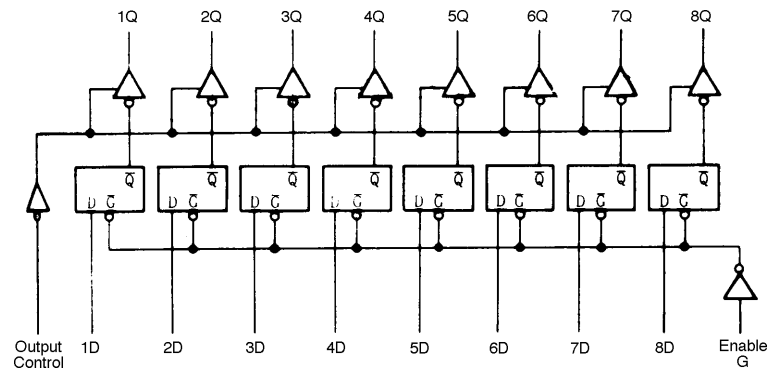
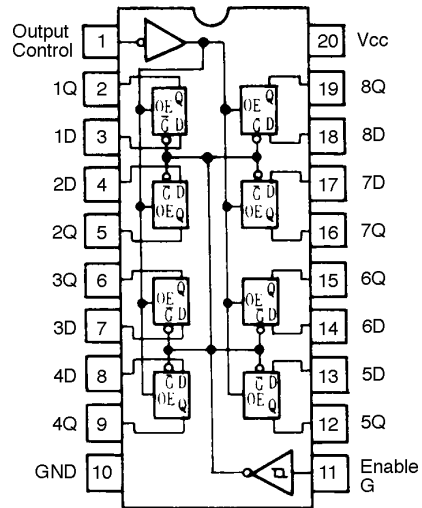
4. TC74HC367AP



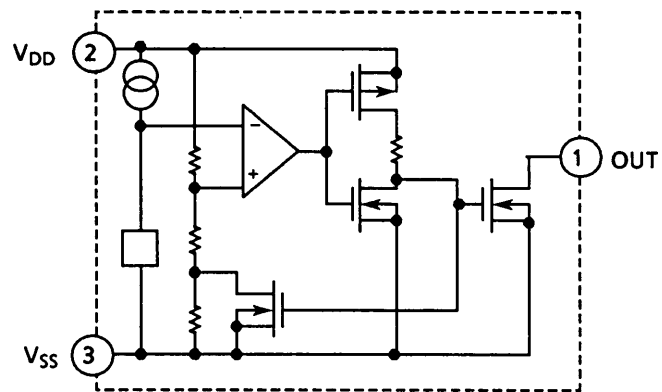
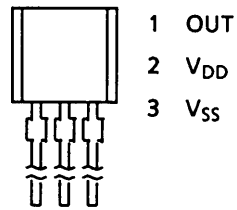
5. TL431CLPB



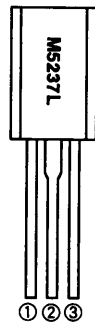
6. TC74HC373AP



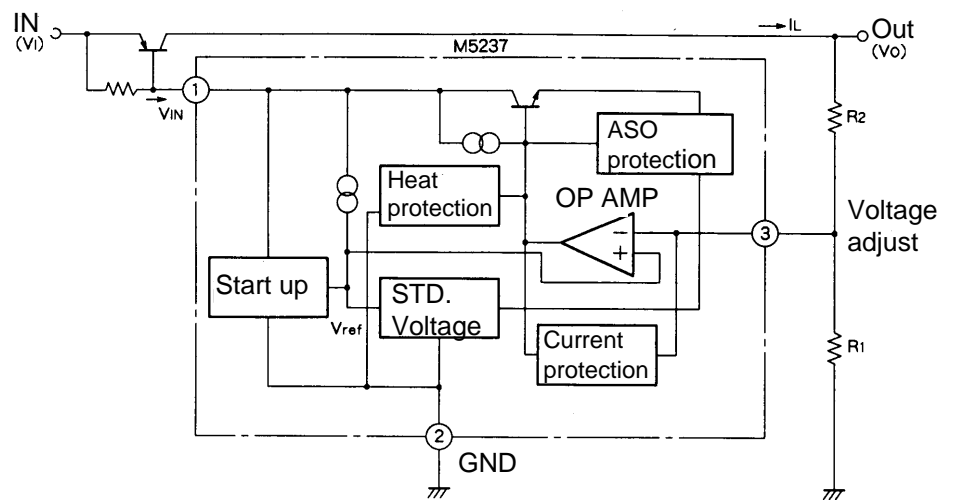
7. S-80745 / S-80719



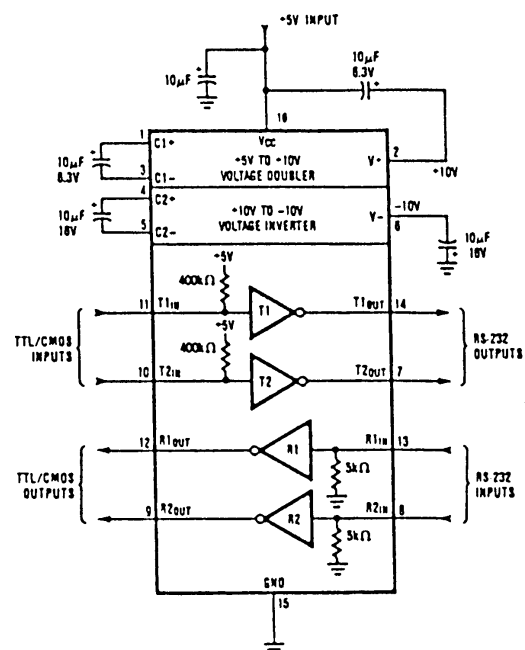
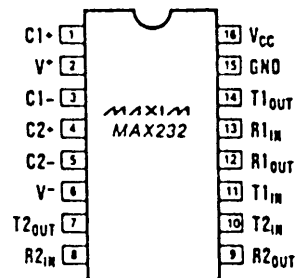
8. M5237L



Terminal
IN
GND
Voltage adjust

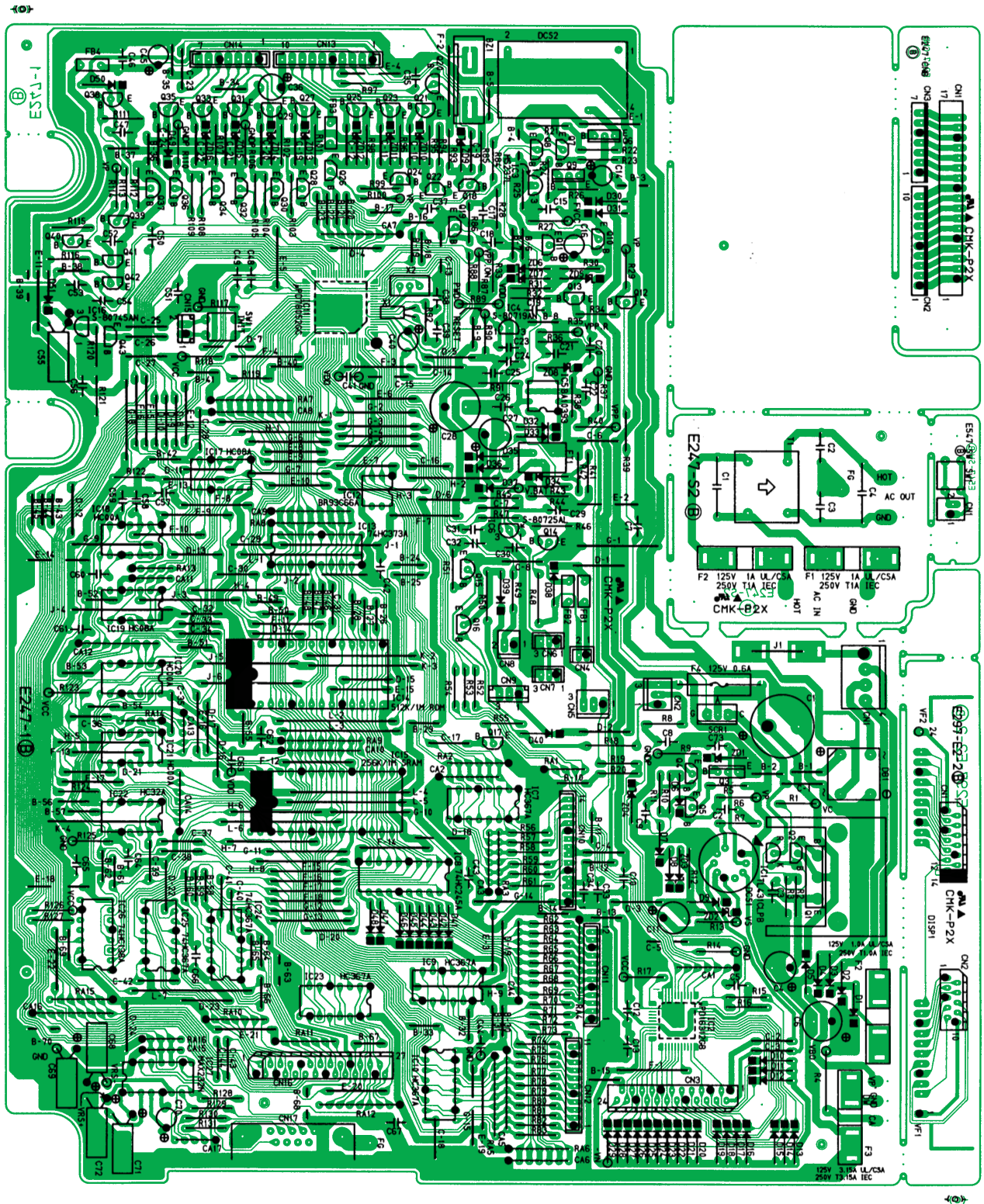


9. MAX232

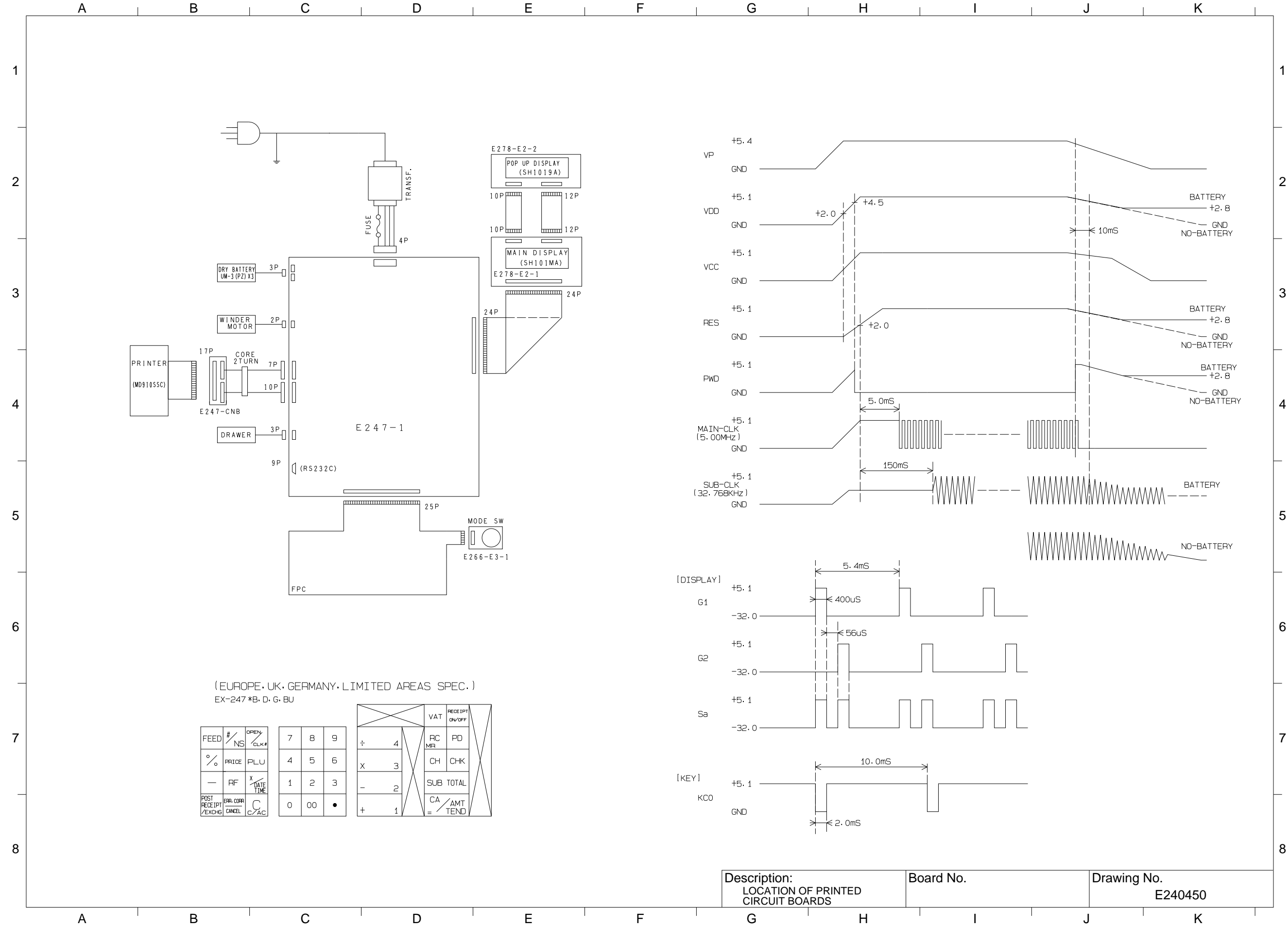


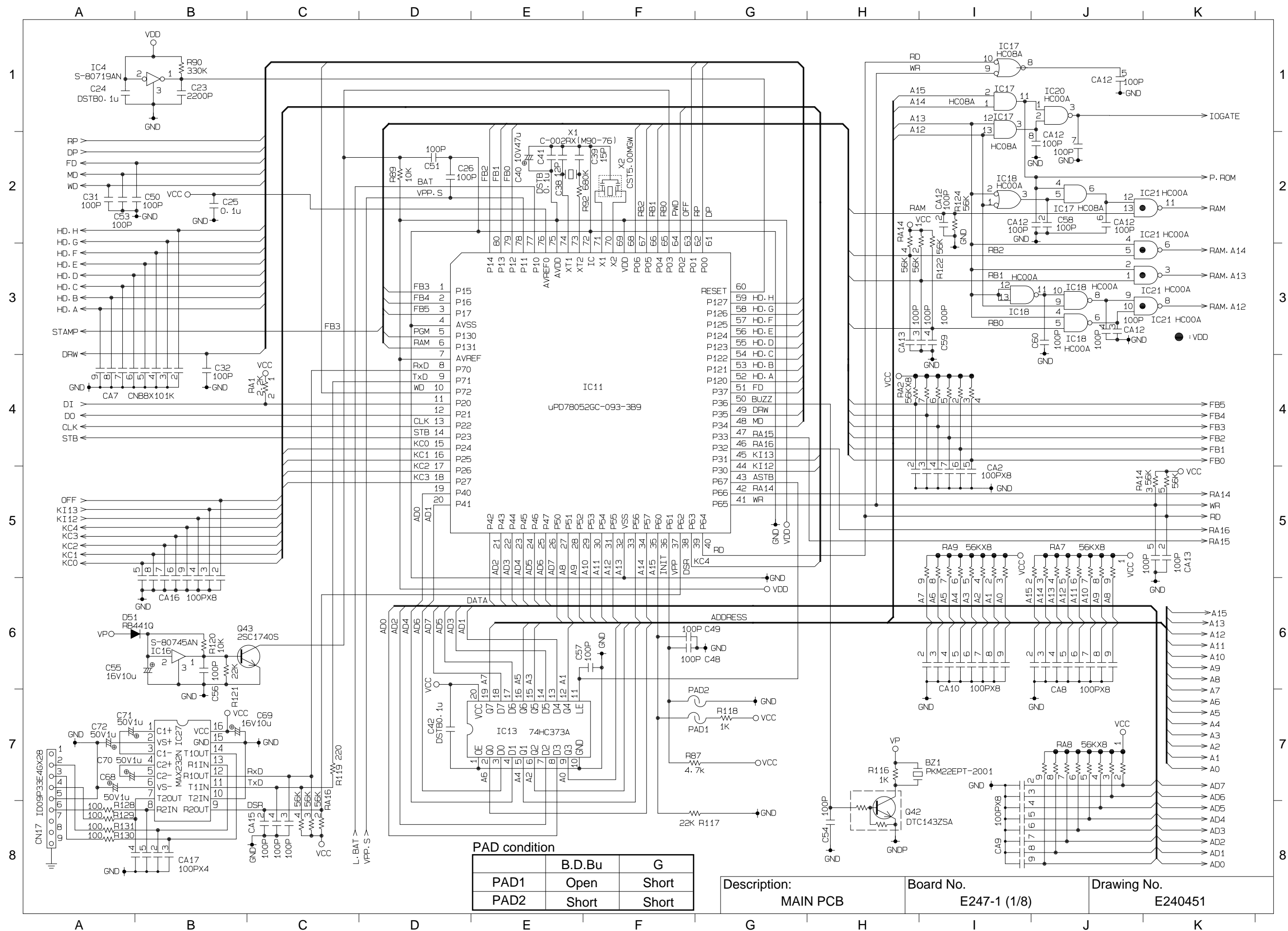
8. PCB LAYOUT

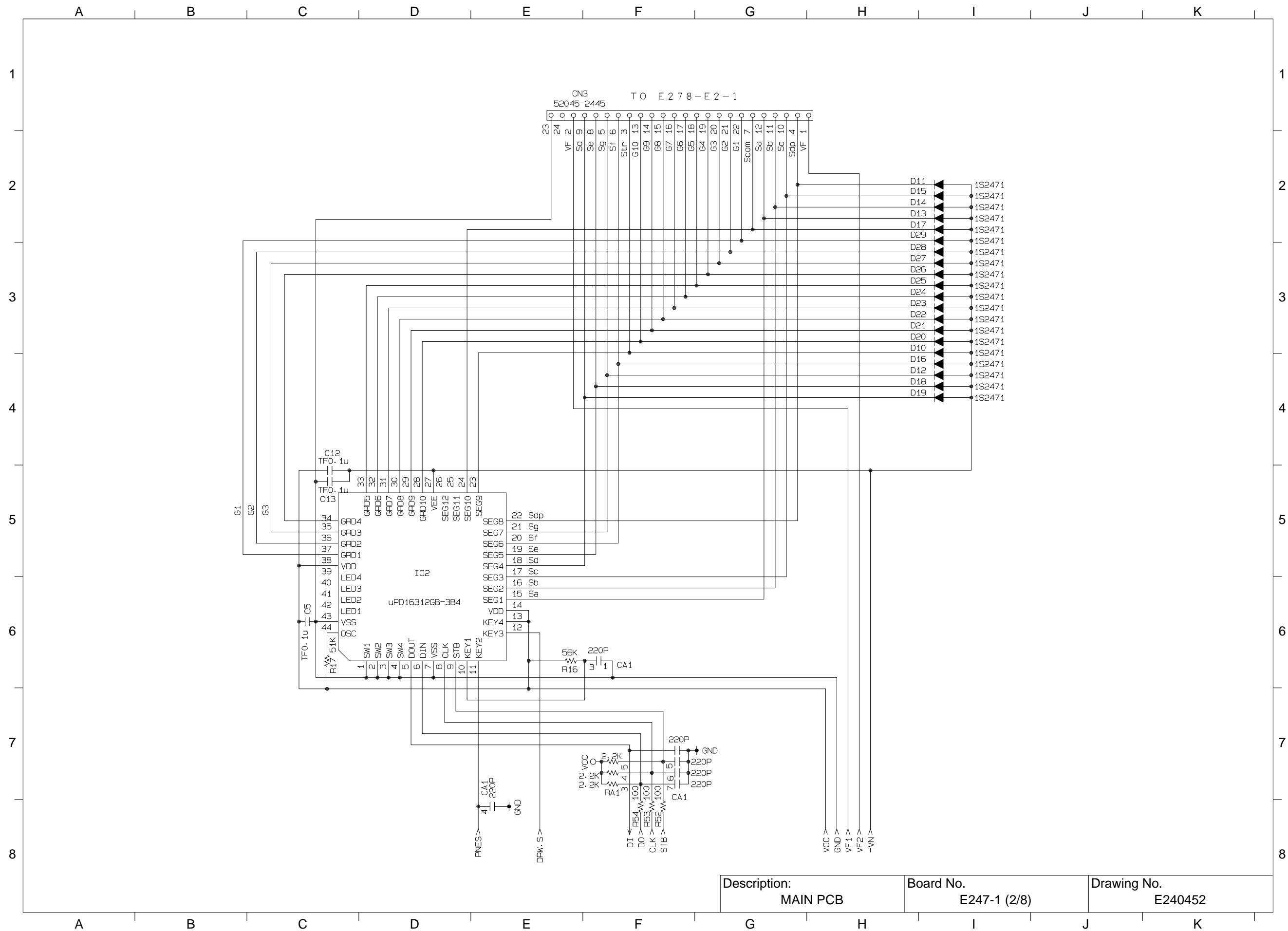
MAIN PCB (E247-1) and Connector PCB (E247-CNB)



9. CIRCUIT DIAGRAMS



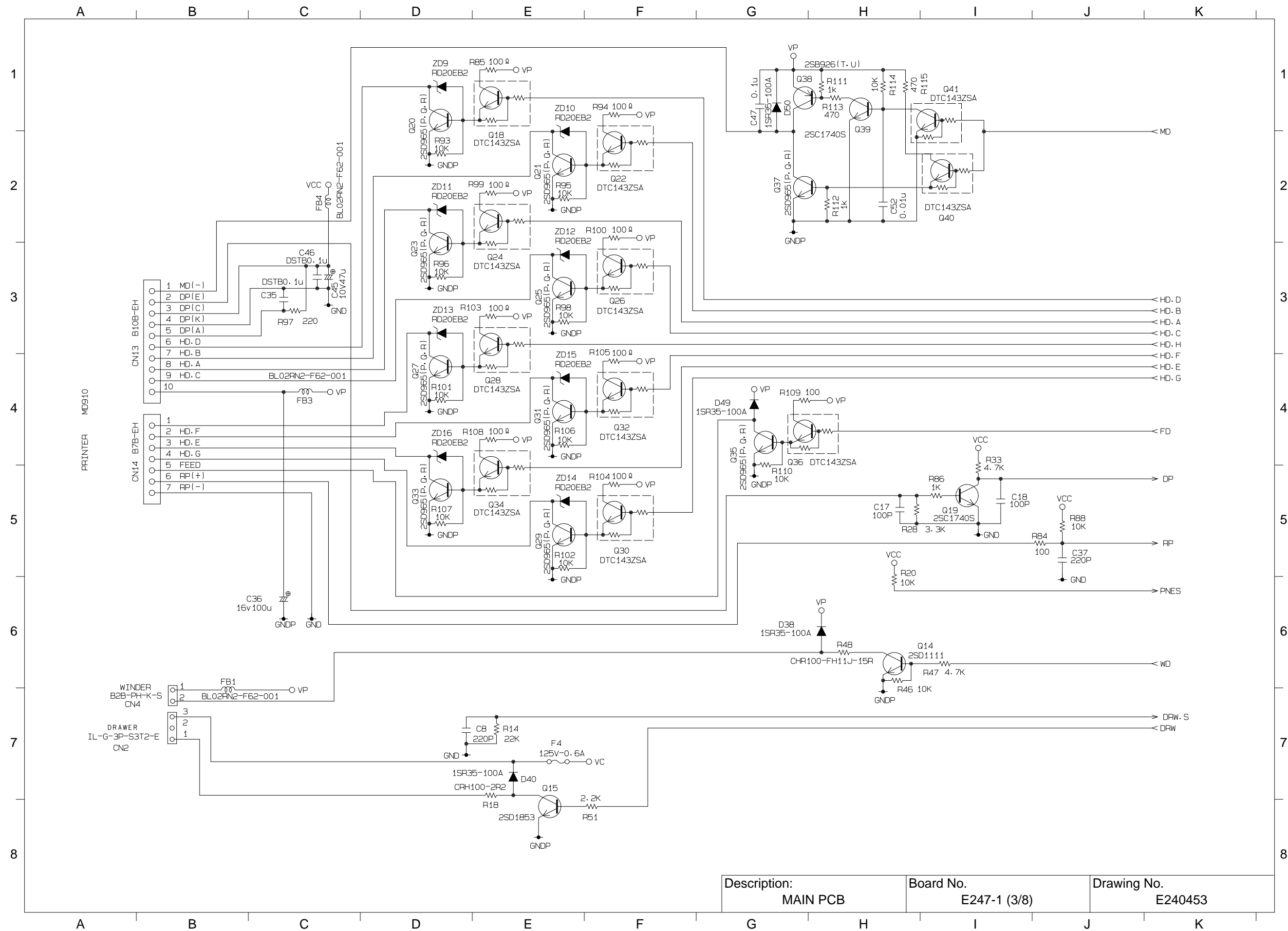


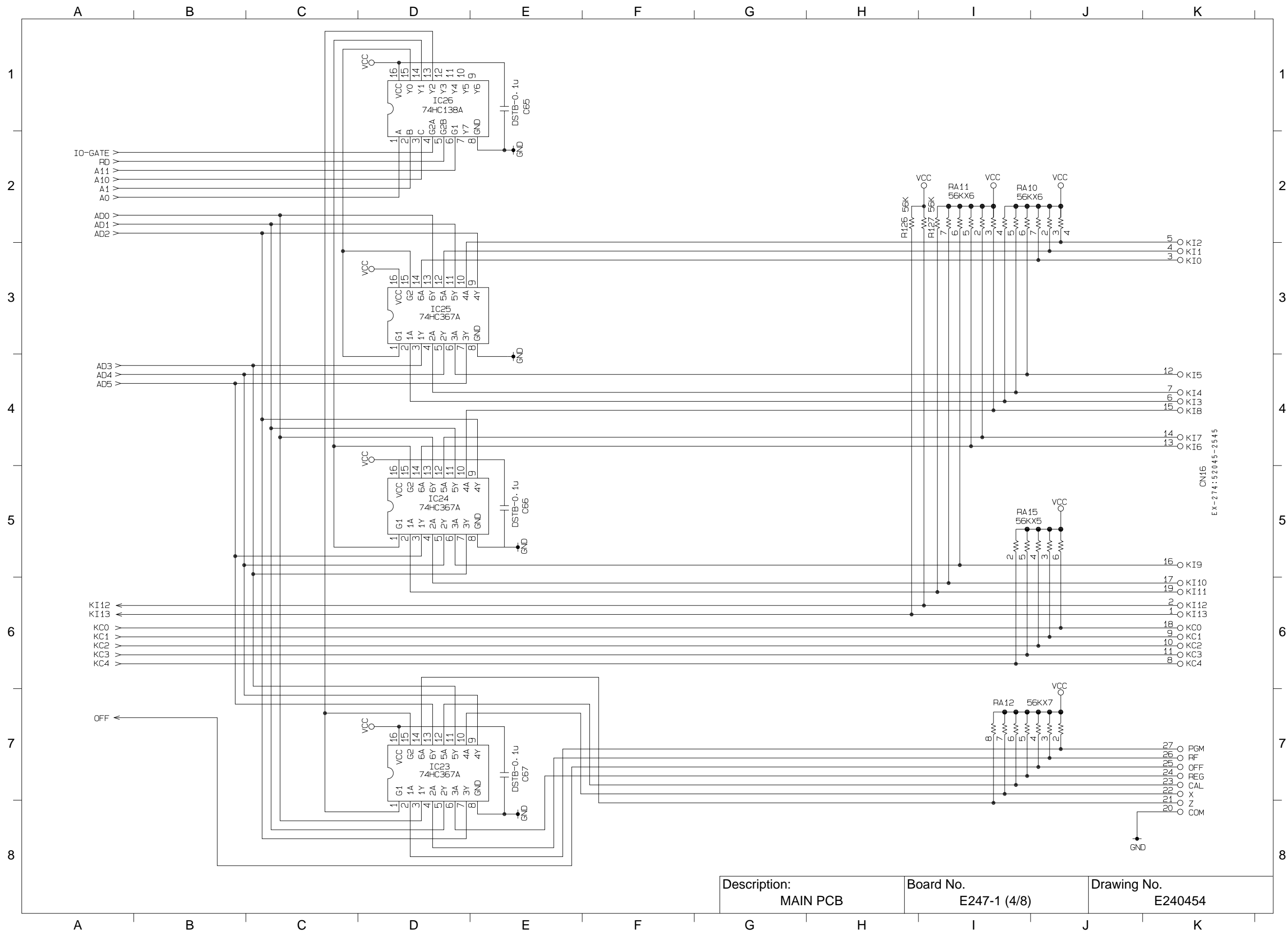


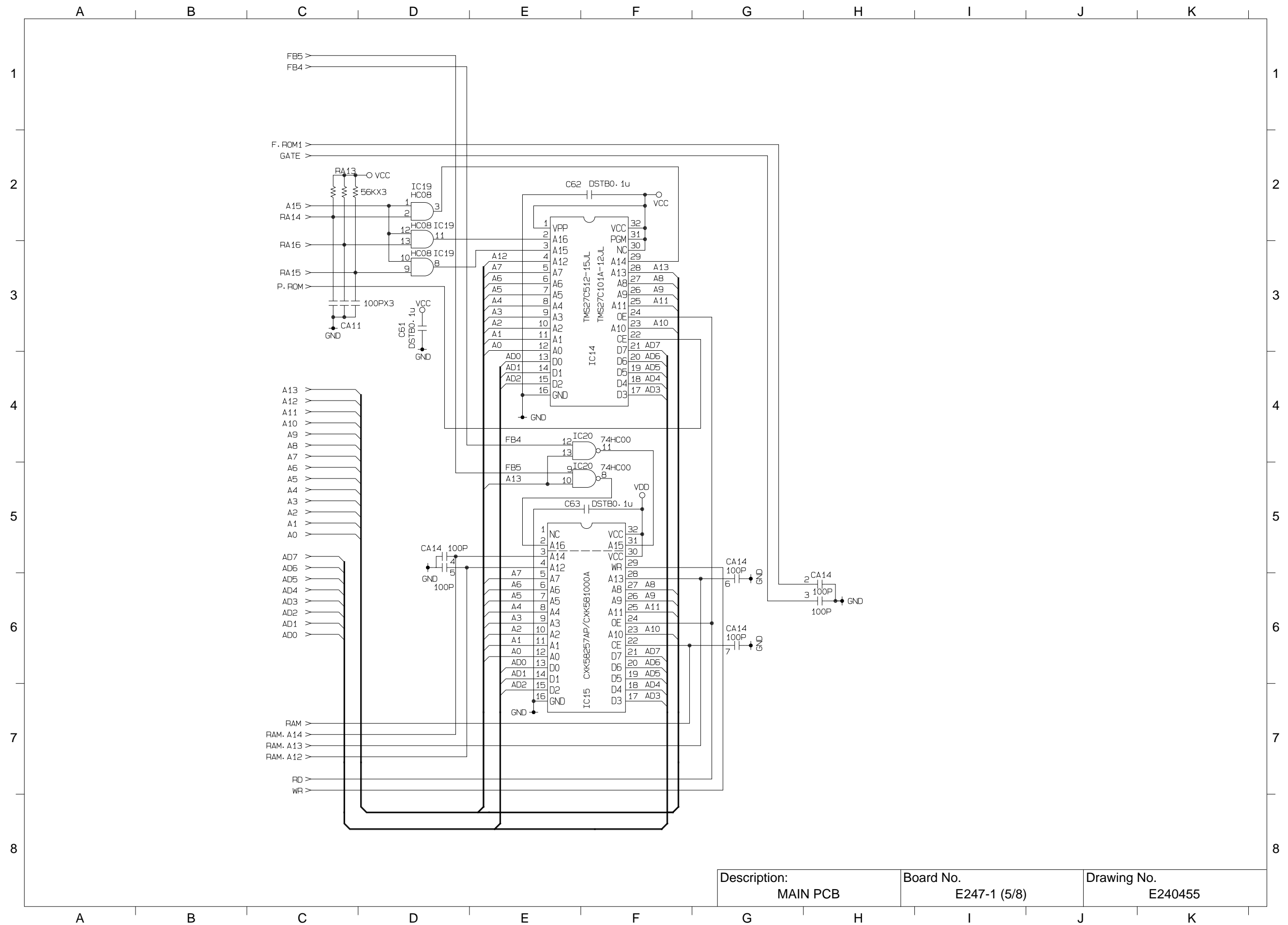
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MAIN PCB

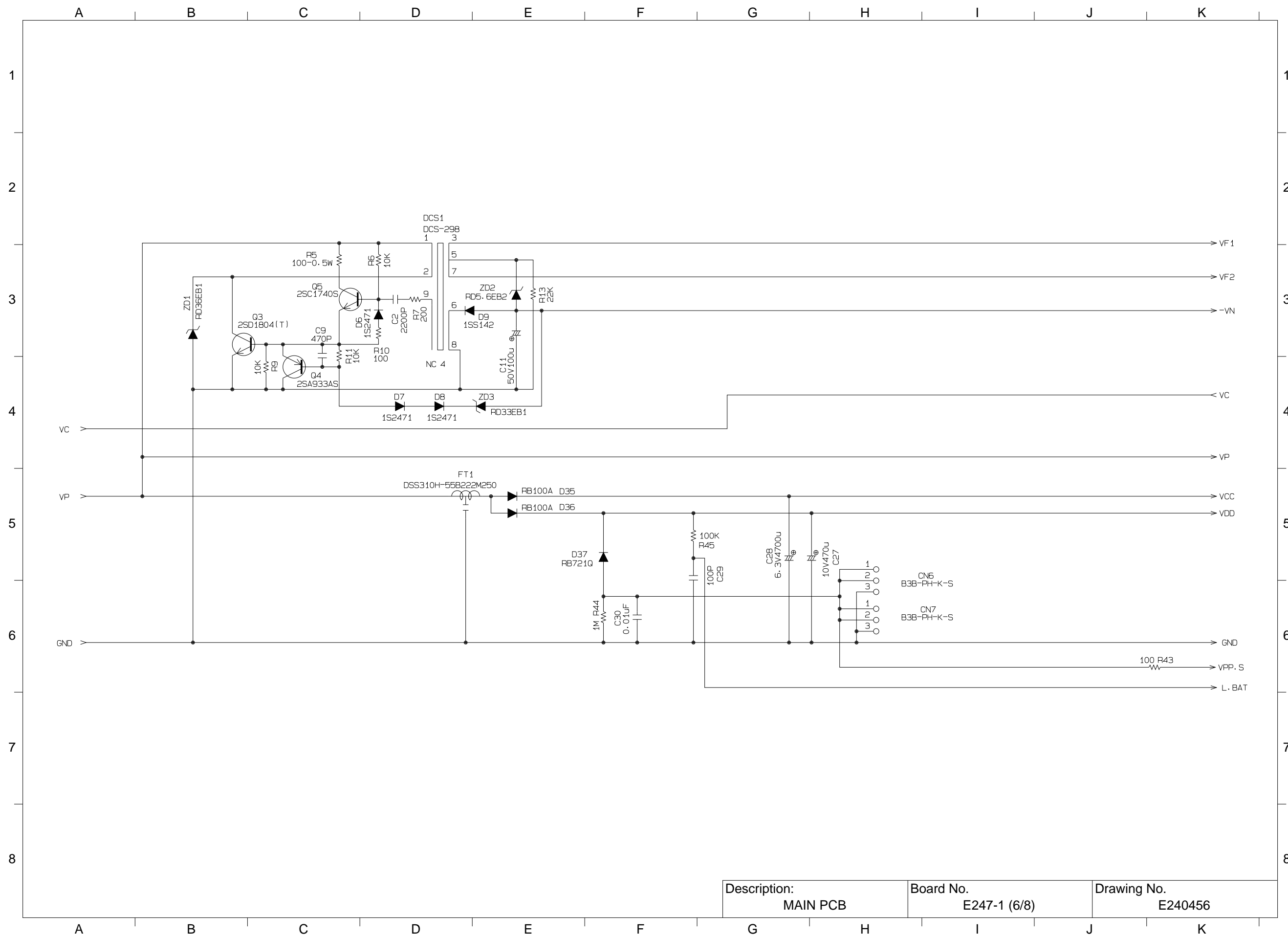
Board No.
E247-1 (2/8)

Drawing No.
E240452







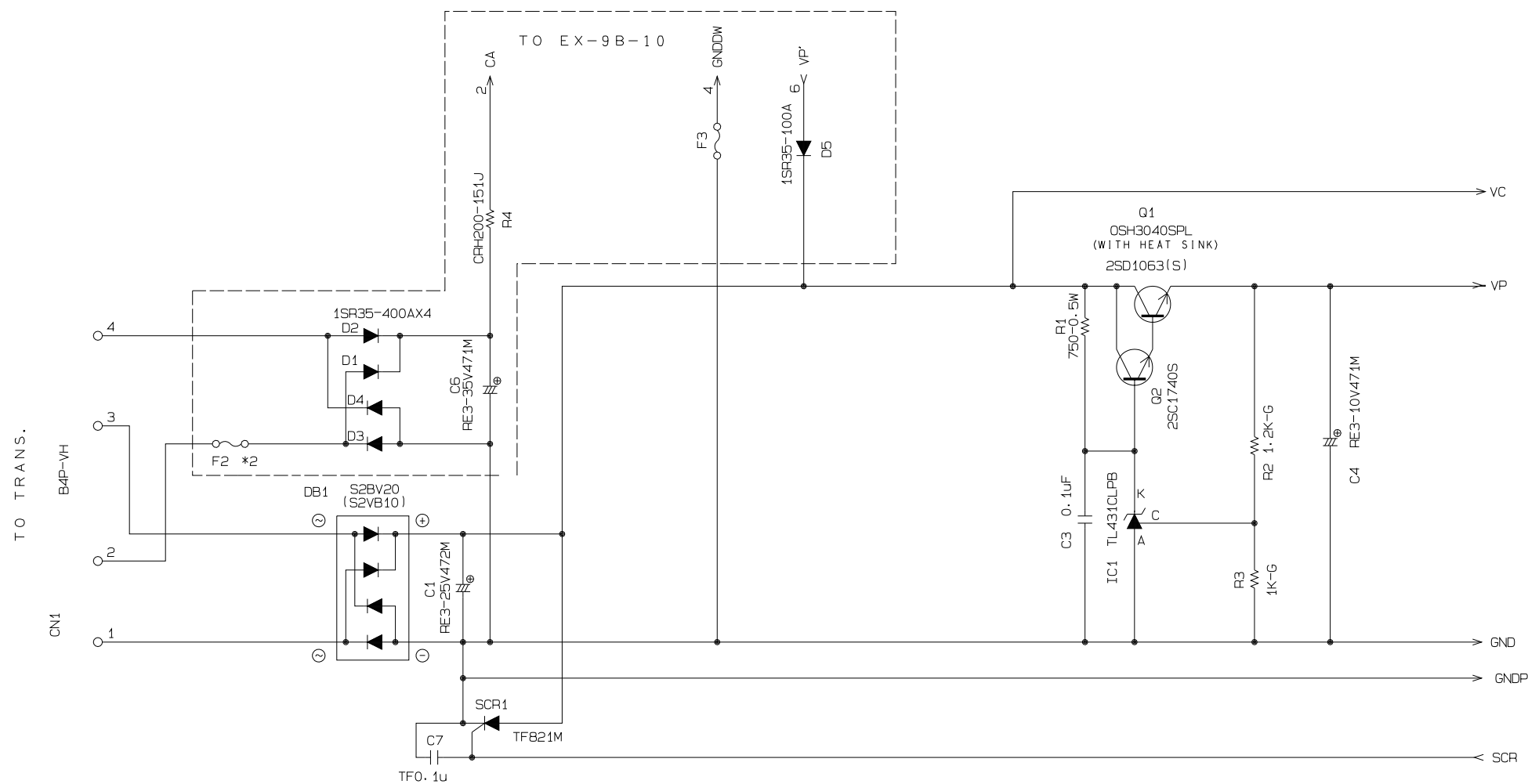


Description: MAIN PCB	Board No. E247-1 (6/8)	Drawing No. E240456
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A B C D E F G H I J K

1
2
3
4
5
6
7
8

NOTE 1. WATAGE OF RESISTERS ARE 1/4 WATTS UNLESS OTHERWISE SPECIFIED.
NOTE 2. THE PARTS DOTTED LINE (——) ARE OPTIONS.



	F2	F3
*A	2381.00	2383.15
*C, *L	2381.00	2383.15
*B, *F, *G	2181.00	2383.15
*BU, *FU	2181.00	2383.15

Description:
MAIN PCB

Board No.
E247-1 (7/8)

Drawing No.
E240457

A B C D E F G H I J K

1

2

3

4

5

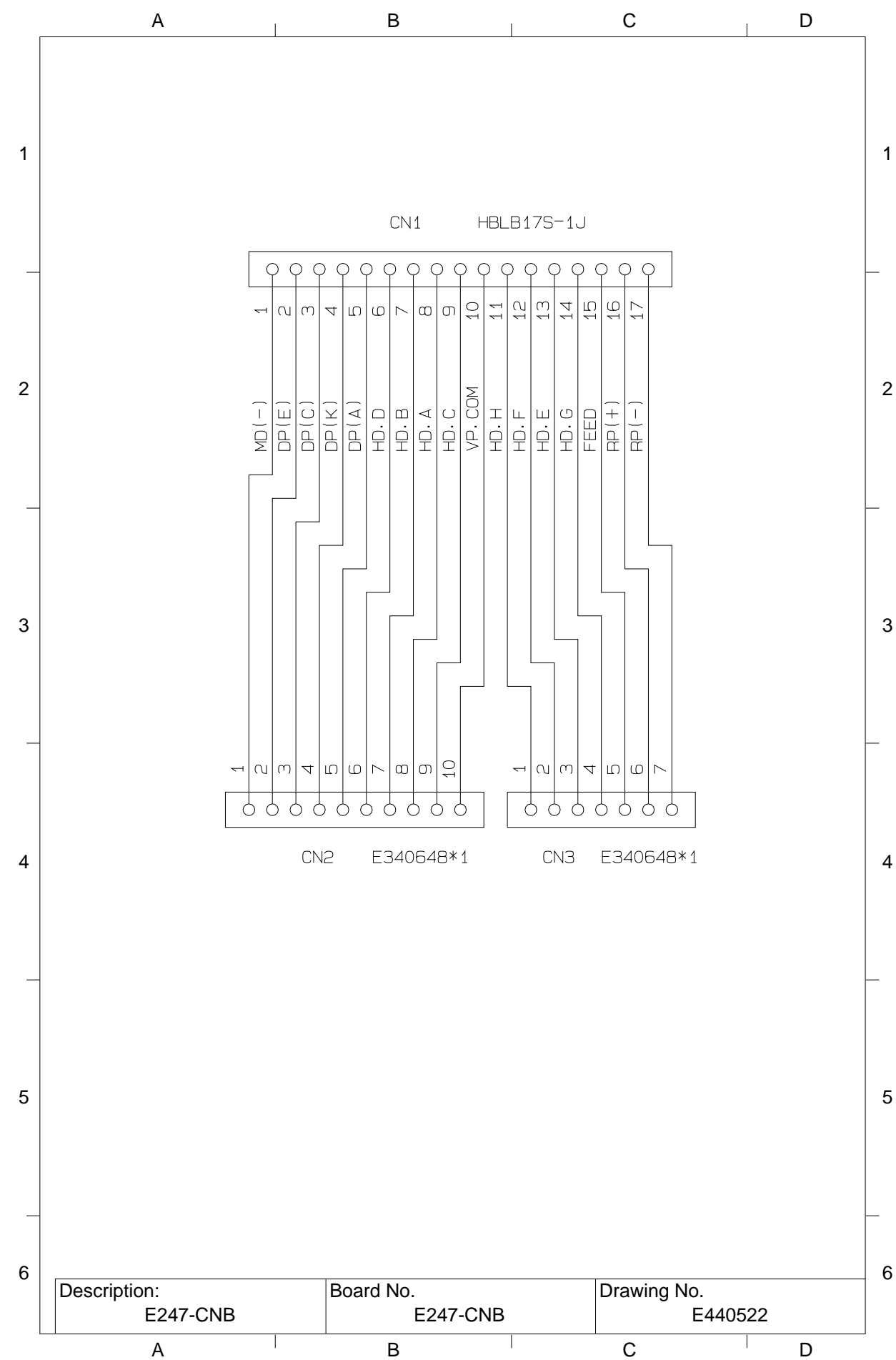
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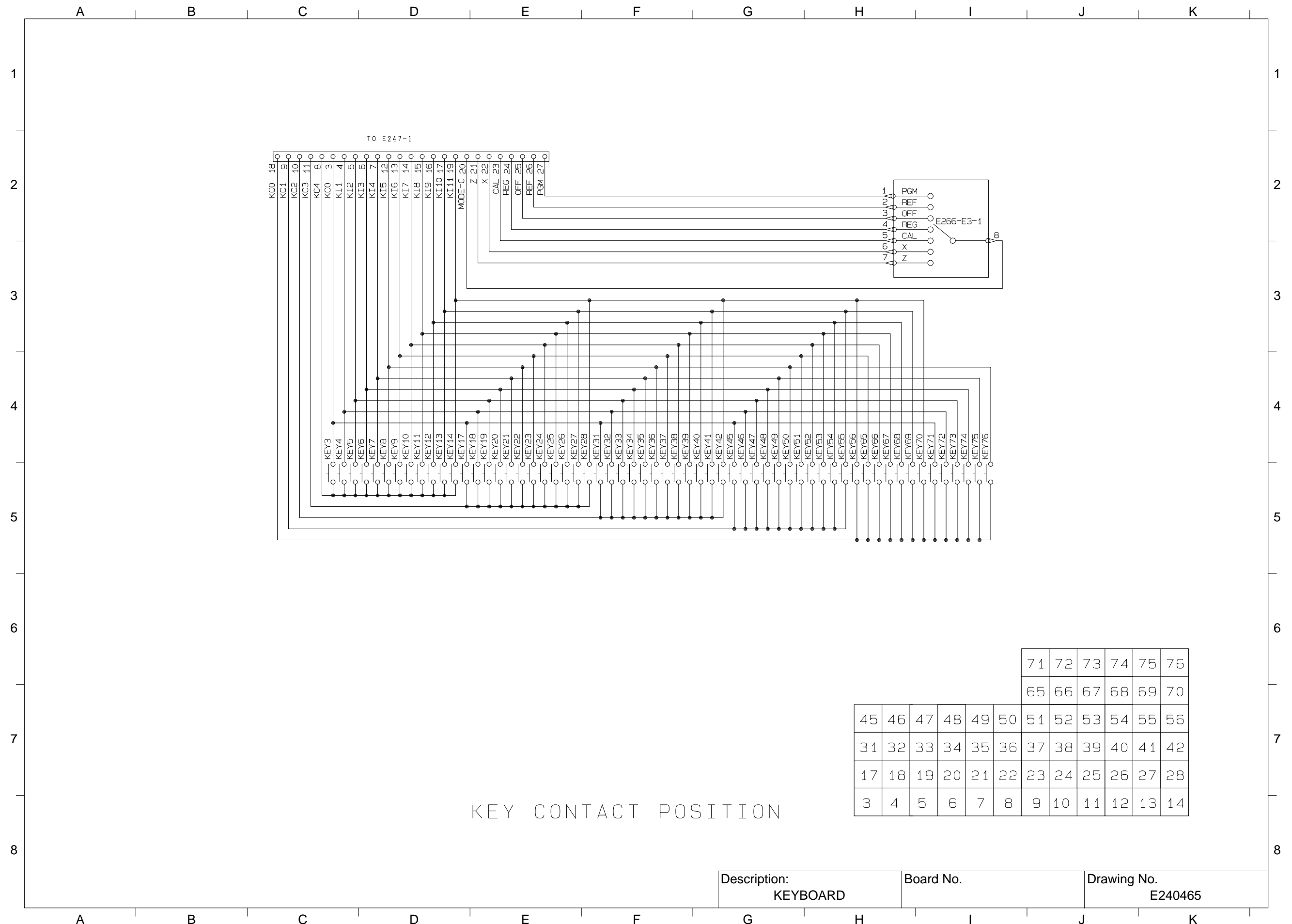
7

8

SYMBLE No.	PARTS NAME	SYMBLE No.	PARTS NAME	SYMBLE No.	PARTS NAME	SYMBLE No.	PARTS NAME	SYMBLE No.	PARTS NAME	SYMBLE No.	PARTS NAME	SYMBLE No.	PARTS NAME
IC1	TL431CLPB	C49	RT-HE40TKYB101K	R53	RD1/4WT-24Y101J	D1	1SR35-100AT-82	Q1	ZSD1063(R, S)	CA1	CNB6X221K	B-1~70	UJW-B
IC2	uPD16312GB-3B4	C50	RT-HE40TKYB101K	R54	RD1/4WT-24Y101J	D2	1SR35-100AT-82	Q2	ZSC1740S (QRSE) TP	CA2	CNB6X101K	C-1~44	UJW-C
IC3	M5237L-T1	C51	RT-HE40TKYB101K	R55	RD1/4WT-24Y472J	D3	1SR35-100AT-82	Q3	ZSD1804 (T)	CA3	CNB6X101K	D-1~24	UJW-D
IC4	S-80719AN-Z	C52	RT-HE12TKYB103K	R56	RD1/4WT-24Y101J	D4	1SR35-100AT-82	Q4	ZSA933AS (QRS) TP	CA4	CNB8X101K	E-1~22	UJW-E
IC5	BA10393	C53	RT-HE40TKYB101K	R57	RD1/4WT-24Y101J	D5	1SR35-100AT-82	Q5	ZSC1740S (QRSE) TP	CA5	CNB8X101K	F-1~18	UJW-F
IC6	S-80725AN-Z	C54	RT-HE40TKYB101K	R58	RD1/4WT-24Y101J	D6	1SZ471-T-77-T	Q6	ZSB1240V2-Q, R	CA6	CNB6X101K	G-1~15	UJW-G
IC7	TC74HC367AP	C55	RE2-16V100MMA-T2	R59	RD1/4WT-24Y101J	D7	1SZ471-T-77-T	Q7	DTC143ZS-TP	CA7	CNB8X101K	H-1~9	UJW-H
IC8	TC74HC245AP	C56	RT-HE40TKYB101K	R60	RD1/4WT-24Y101J	D8	1SZ471-T-77-T	Q8	DTC143ZS-TP	CA8	CNB8X101K	J-1~6	UJW-J
IC9	TC74HC367AP	C57	RT-HE40TKYB101K	R61	RD1/4WT-24Y101J	D9	1SS142-T-77	Q9	ZSB1240V2-Q, R	CA9	CNB8X101K	K-1~4	UJW-K
IC10	TC74HC367AP	C58	RT-HE40TKYB101K	R62	RD1/4WT-24Y102J	D10	1SZ471-T-77-T	Q10	DTA143ZS-TP	CA10	CNB8X101K	L-1~7	UJW-L
IC11	uPD78052GC-093-3B9	C59	RT-HE40TKYB101K	R63	RD1/4WT-24Y102J	D11	1SZ471-T-77-T	Q11	DTC143ZS-TP	CA11	CNB4X101K		
IC12	BR93C66A	C60	RT-HE40TKYB101K	R64	RD1/4WT-24Y102J	D12	1SZ471-T-77-T	Q12	ZSA933AS (QRS) TP	CA12	CNB8X101K		
IC13	TC74HC373AP	C61	RT-DSTB90TKYR104K	R65	RD1/4WT-24Y102J	D13	1SZ471-T-77-T	Q13	ZSC1740S (QRSE) TP	CA13	CNB4X101K		
IC14	TMS27C512-12/15JL	C62	RT-DSTB90TKYR104K	R66	RD1/4WT-24Y102J	D14	1SZ471-T-77-T	Q14	ZSD1111-AA	CA14	CNB6X101K		
IC14	DILB28P-8JK	C63	RT-DSTB90TKYR104K	R67	RD1/4WT-24Y102J	D15	1SZ471-T-77-T	Q15	ZSD1853-AA	CA15	CNB4X101K		
IC15	CXX58257AP-70/10L	C64	RT-HE40TKYB101K	R68	RD1/4WT-24Y102J	D16	1SZ471-T-77-T	Q16	ZSD1853-AA	CA16	CNB8X101K		
IC16	S-80745AN-Z	C65	RT-DSTB90TKYR104K	R69	RD1/4WT-24Y102J	D17	1SZ471-T-77-T	Q17	DTA143ZS-TP	CA17	CNB4X101K		
IC17	TC74HC08AP	C66	RT-DSTB90TKYR104K	R70	RD1/4WT-24Y101J	D18	1SZ471-T-77-T	Q18	DTC143ZS-TP				
IC18	TC74HC00AP	C67	RT-DSTB90TKYR104K	R71	RD1/4WT-24Y101J	D19	1SZ471-T-77-T	Q19	ZSC1740S (QRSE) TP				
IC19	TC74HC08AP	C68	RE2-50V010MMA-T2	R72	RD1/4WT-24Y101J	D20	1SZ471-T-77-T	Q20	ZSD965 (P, Q, R) -TA				
IC20	TC74HC00AP	C69	RE2-16V100MMA-T2	R73	RD1/4WT-24Y101J	D21	1SZ471-T-77-T	Q21	ZSD965 (P, Q, R) -TA				
IC21	TC74HC00AP	C70	RE2-50V010MMA-T2	R74	RD1/4WT-24Y101J	D22	1SZ471-T-77-T	Q22	DTC143ZS-TP	CN1	B4P-VH		
IC22	TC74HC32AP	C71	RE2-50V010MMA-T2	R75	RD1/4WT-24Y101J	D23	1SZ471-T-77-T	Q23	ZSD965 (P, Q, R) -TA	CN2	IL-G-3P-S3T2-E		
IC23	TC74HC367AP	C72	RE2-50V010MMA-T2	R76	RD1/4WT-24Y101J	D24	1SZ471-T-77-T	Q24	DTC143ZS-TP	CN3	52045-2445		
IC24	TC74HC367AP	C73	RT-HE40TKYB471K	R77	RD1/4WT-24Y101J	D25	1SZ471-T-77-T	Q25	ZSD965 (P, Q, R) -TA	CN4	B2B-PH-K-S		
IC25	TC74HC367AP			R78	RD1/4WT-24Y101J	D26	1SZ471-T-77-T	Q26	DTC143ZS-TP	CN5	TID-X03P-B2		
IC26	TC74HC138AP			R79	RD1/4WT-24Y101J	D27	1SZ471-T-77-T	Q27	ZSD965 (P, Q, R) -TA	CN6	B3B-PH-K-S		
IC27	MAX232N			R80	RD1/4WT-24Y101J	D28	1SZ471-T-77-T	Q28	DTC143ZS-TP	CN7	B3B-PH-K-S		
		R1	RD1/2WM2Y751J	R81	RD1/4WT-24Y101J	D29	1SZ471-T-77-T	Q29	ZSD965 (P, Q, R) -TA	CN8	B2B-EH		
		R2	RD1/4WT-24Y122G	R82	RD1/4WT-24Y101J	D30	RB100AT-32	Q30	DTC143ZS-TP	CN9	B3B-EH		
		R3	RD1/4WT-24Y102G	R83	RD1/4WT-24Y101J	D31	RB100AT-32	Q31	ZSD965 (P, Q, R) -TA	CN10	B14B-PH-K-S		
		R4	RSN2WMG151J	R84	RD1/4WT-24Y101J	D32	1SZ473T-77-T	Q32	DTC143ZS-TP	CN11	B12B-PH-K-S		
		R5	RD1/2WM2Y101J	R85	RD1/4WT-24Y101J	D33	1SZ473T-77-T	Q33	ZSD965 (P, Q, R) -TA	CN12	B11B-PH-K-S		
C1	RE3-25V472M	R6	RD1/4WT-24Y103J	R86	RD1/4WT-24Y103J	D34	RB441QT-77	Q34	DTC143ZS-TP	CN13	B10B-EH		
C2	RT-HE60TKYB222K	R7	RD1/4WT-24Y201J	R87	RD1/4WT-24Y472J	D35	RB100AT-32	Q35	ZSD965 (P, Q, R) -TA	CN14	B7B-EH		
C3	AMZV0050K1040200	R8	RD1/4WT-24Y751J	R88	RD1/4WT-24Y103J	D36	RB100AT-32	Q36	DTC143ZS-TP	CN15	TID-X02P-B2		
C4	RE3-10V471M-T2	R9	RD1/4WT-24Y103J	R89	RD1/4WT-24Y103J	D37	RB7210T-77	Q37	ZSD965 (P, Q, R) -TA	CN16	52045-2545		
C5	AMZV0050K1040200	R10	RD1/4WT-24Y101J	R90	RD1/4WT-24Y334J	D38	1SR35-100AT-82	Q38	ZSB926 (T, U) -AA	CN17	ID09P33E4GX28		
C6	RE3-35V471M-T2	R11	RD1/4WT-24Y103J	R91	RD1/4WT-24Y103J	D39	1SR35-100AT-82	Q39	ZSC1740S (QRSE) TP				
C7	AMZV0050K1040200	R12	RD1/4WT-24Y104J	R92	RD1/4WT-24Y684J	D40	1SR35-100AT-82	Q40	DTC143ZS-TP				
C8	RT-HE40TKYB221K	R13	RD1/4WT-24Y223J	R93	RD1/4WT-24Y103J	D41	1SZ473T-77-T	Q41	DTC143ZS-TP				
C9	RT-HE40TKYB471K	R14	RD1/4WT-24Y223J	R94	RD1/4WT-24Y101J	D42	1SZ473T-77-T	Q42	DTC143ZS-TP	DB1	S2VB20		
C10	AMZV0050K1040200	R15	RD1/4WT-24Y101J	R95	RD1/4WT-24Y103J	D43	1SZ473T-77-T	Q43	ZSC1740S (QRSE) TP	SCR1	TF821M		
C11	RE3-50V101M-T2	R16	RD1/4WT-24Y563J	R96	RD1/4WT-24Y103J	D44	1SZ473T-77-T			F2	2181. 00		
C12	AMZV0050K1040200	R17	RD1/4WT-24Y513J	R97	RD1/4WT-24Y221J	D45	1SZ473T-77-T			F2	UF0033		
C13	AMZV0050K1040200	R18	RSN1WMG2R2J	R98	RD1/4WT-24Y103J	D46	1SZ473T-77-T						
C14	RE3-16V22RM-T2	R19	RD1/4WT-24Y101J	R99	RD1/4WT-24Y101J	D47	1SZ473T-77-T						
C15	RT-HE12TKYB103K	R20	RD1/4WT-24Y103J	R100	RD1/4WT-24Y101J	D48	1SZ473T-77-T	RA1	RGLD4X222J				
C16	RE3-16V22RM-T2	R21	RD1/4WT-24Y103J	R101	RD1/4WT-24Y103J	D49	1SR35-100AT-82	RA2	RGLD6X563J				
C17	RT-HE40TKYB101K	R22	RD1/4WT-24Y563J	R102	RD1/4WT-24Y103J	D50	1SR35-100AT-82	RA3	RGLD6X563J	F3	2383. 15		
C18	RT-HE40TKYB101K	R23	RD1/4WT-24Y103J	R103	RD1/4WT-24Y101J	D51	RB441QT-77	RA4	RGLD8X563J	F3	UF0033		
C19	AMZV0050K1040200	R24	RD1/4WT-24Y331J	R104	RD1/4WT-24Y101J			RA5	RGLD8X563J				
C20	RT-HE40TKYB101K	R25	RD1/4WT-24Y242G	R105	RD1/4WT-24Y101J			RA6	RGLD6X563J	F4	230. 600		
C21	RT-HE40TKYB101K	R26	RD1/4WT-24Y221J	R106	RD1/4WT-24Y103J			RA7	RGLD8X563J				
C22	RT-HE40TKYB101K	R27	RD1/4WT-24Y103G	R107	RD1/4WT-24Y103J			RA8	RGLD8X563J				
C23	RT-HE60TKYB222K	R28	RD1/4WT-24Y332J	R108	RD1/4WT-24Y101J			RA9	RGLD8X563J				
C24	RT-DSTB90TKYR104K	R29	RD1/4WT-24Y102J	R109	RD1/4WT-24Y101J			RA10	RGLD6X563J	X1	C-002RX (M90-76)		
C25	AMZV0050K1040200	R30	RD1/4WT-24Y102J	R110	RD1/4WT-24Y103J			RA11	RGLD6X563J	X2	CST5. 00MGW		
C26	RT-HE40TKYB101K	R31	RD1/4WT-24Y301J	R111	RD1/4WT-24Y102J			RA12	RGLD8X563J				
C27	RE3-10V471M-T2	R32	RD1/4WT-24Y333J	R112	RD1/4WT-24Y102J			RA13	RGLD4X563J				
C28	RE3-6. 3V472M	R33	RD1/4WT-24Y472J	R113	RD1/4WT-24Y471J			RA14	RGLD4X563J	DCS1	DCS-298		
C29	RT-HE40TKYB101K	R34	RD1/4WT-24Y472J	R114	RD1/4WT-24Y103J			RA15	RGLD6X563J	DCS2	PS10017		
C30	RT-HE12TKYB103K	R35	RD1/4WT-24Y822G	R115	RD1/4WT-24Y471J			RA16	RGLD4X563J				
C31	RT-HE40TKYB101K	R36	RD1/4WT-24Y242G	R116	RD1/4WT-24Y102J								
C32	RT-HE40TKYB101K	R37	RD1/4WT-24Y222G	R117	RD1/4WT-24Y223J								
C33	AMZV0050K1040200	R38	RD1/4WT-24Y302J	R118	RD1/4WT-24Y102J								
C34	RT-DSTB90TKYR104K	R39	RD1/4WT-24Y152J	R119	RD1/4WT-24Y221J								
C35	RT-DSTB90TKYR104K	R40	RD1/4WT-24Y103G	R120	RD1/4WT-24Y103J								
C36	RE3-16V101M-T2	R41	CRB20T24EFY2200	R121	RD1/4WT-24Y223J								
C37	RT-HE40TKYB221K	R42	CRB20T24EFY1200	R122	RD1/4WT-24Y563J								
C38	RT-HE40TKCHI20J	R43	RD1/4WT-24Y101J	R123	RD1/4WT-24Y563J								
C39	RT-HE40TKCHI50J	R44	RD1/4WT-24Y105J	R124	RD1/4WT-24Y563J								
C40	RE2-10V470MMA-T2	R45	RD1/4WT-24Y105J	R125	RD1/4WT-24Y223J								
C41	RT-DSTB90TKYR104K	R46	RD1/4WT-24Y103J	R126	RD1/4WT-24Y563J								
C42	RT-DSTB90TKYR104K	R47	RD1/4WT-24Y472J	R127	RD1/4WT-24Y563J								
C43	RT-DSTB90TKYR104K	R48	RSN1WMG15RJ	R128	RD1/4WT-24Y101J								
C44	RT-DSTB90TKYR104K	R49	RD1/4WT-24Y102J	R129	RD1/4WT-24Y101J								
C45	RE2-10V470MMA-T2	R50	RSN1WMG2R2J	R130	RD1/4WT-24Y101J								
C46	RT-DSTB90TKYR104K	R51	RD1/4WT-24Y222J	R131	RD1/4WT-24Y101J								
C47	AMZV0050K1040200	R52	RD1/4WT-24Y101J										
C48	RT-HE40TKYB101K												

SYMBLE No.	PARTS NAME	SYMBLE No.	PARTS NAME	SYMBLE No.	PARTS NAME	SYMBLE No.	PARTS NAME	SYMBLE No.	PARTS NAME	SYMBLE No.	PARTS NAME	SYMBLE No.	PARTS NAME
CA1	CNB6X221K	CA2	CNB6X101K	CA3	CNB6X101K	CA4	CNB8X101K	CA5	CNB8X101K	CA6	CNB6X101K	CA7	CNB8X101K
CA8	CNB8X101K	CA9	CNB8X101K	CA10	CNB8X101K	CA11	CNB4X101K	CA12	CNB8X101K	CA13	CNB4X101K	CA14	CNB6X101K
CA15	CNB4X101K	CA16	CNB8X101K	CA17	CNB4X101K								



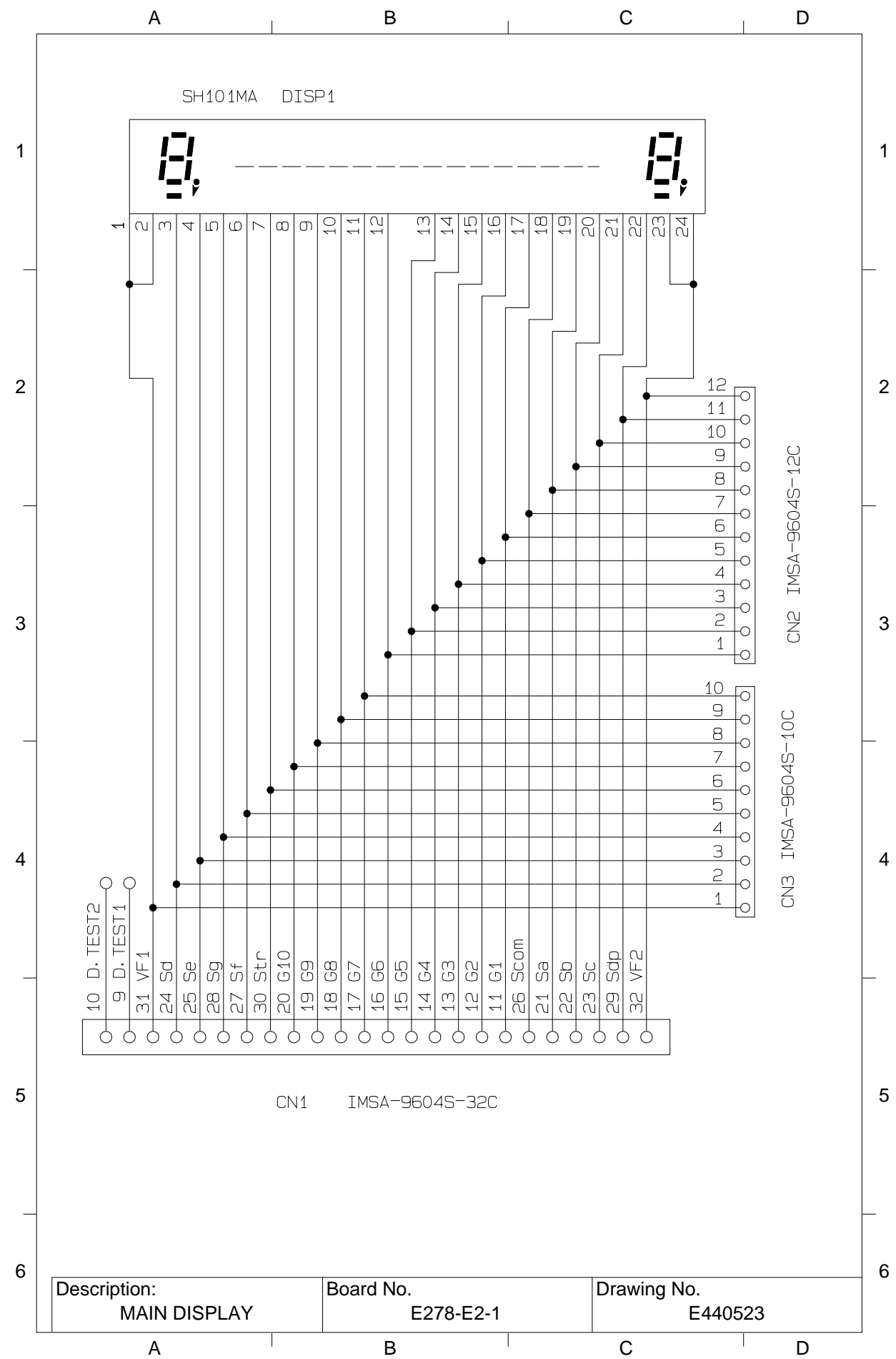


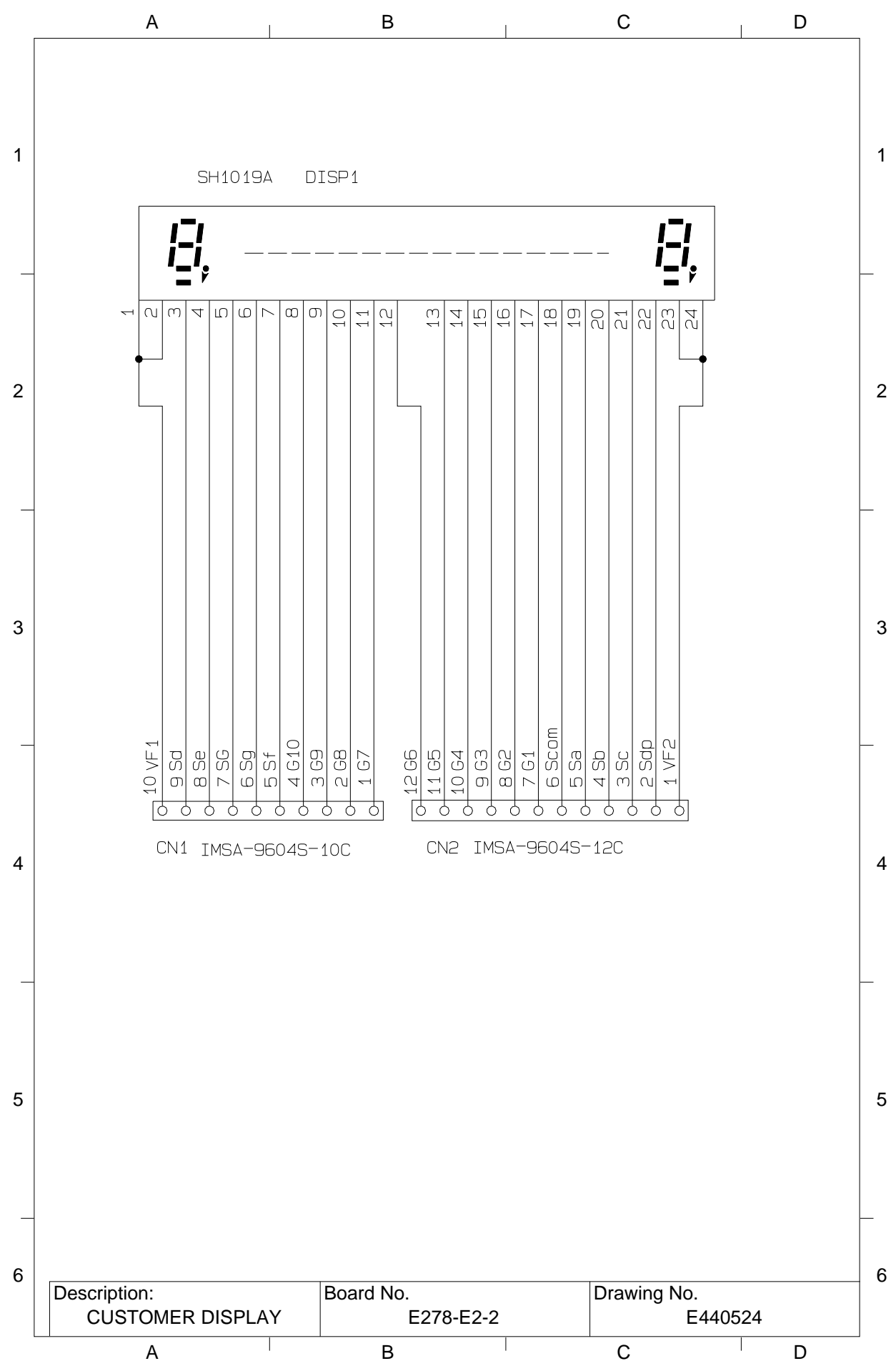
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						65	66	67	68	69	70
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31	32	33	34	35	36	37	38	39	40	41	42
17	18	19	20	21	22	23	24	25	26	27	28
3	4	5	6	7	8	9	10	11	12	13	14

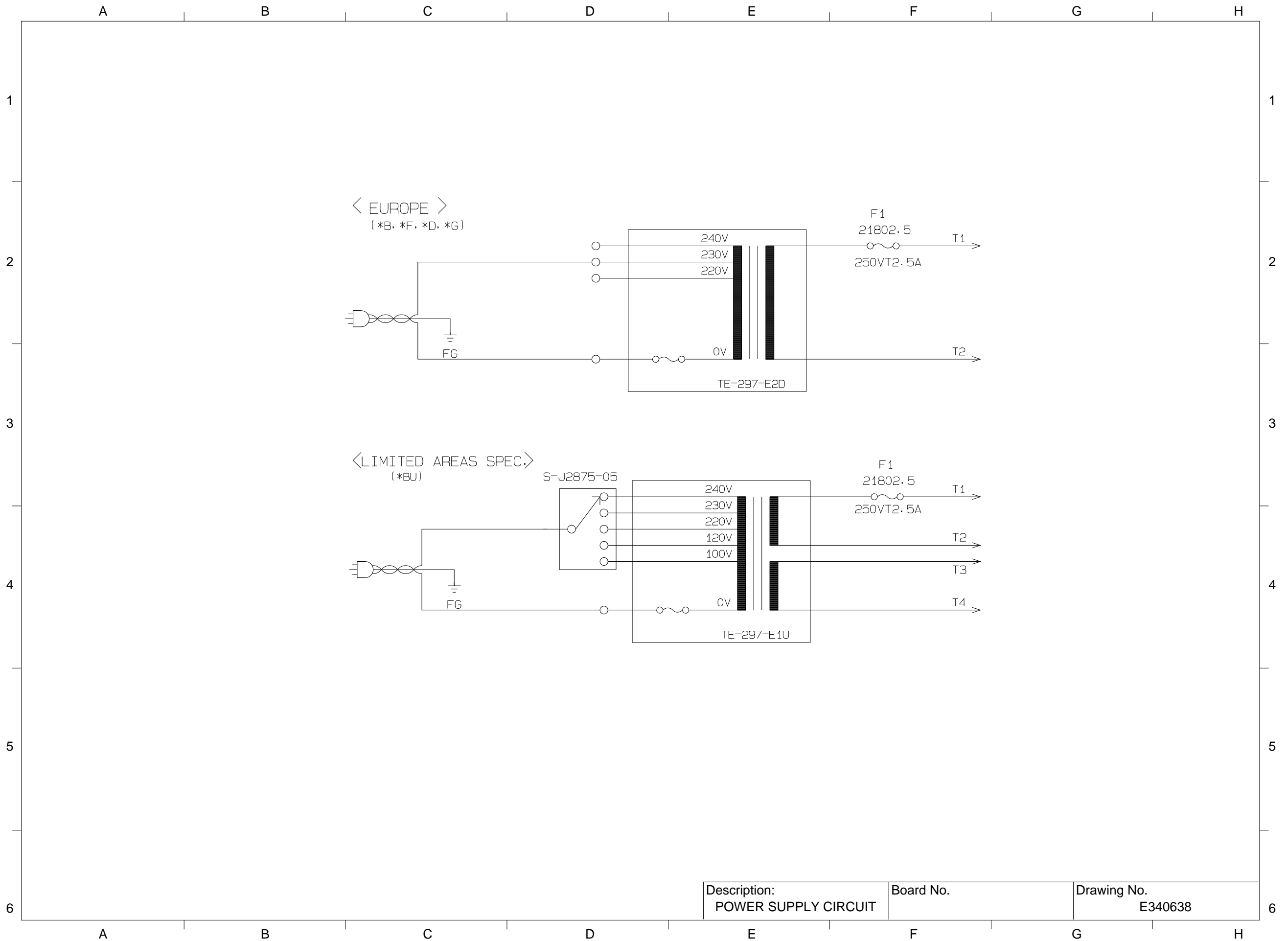
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KEYBOARD

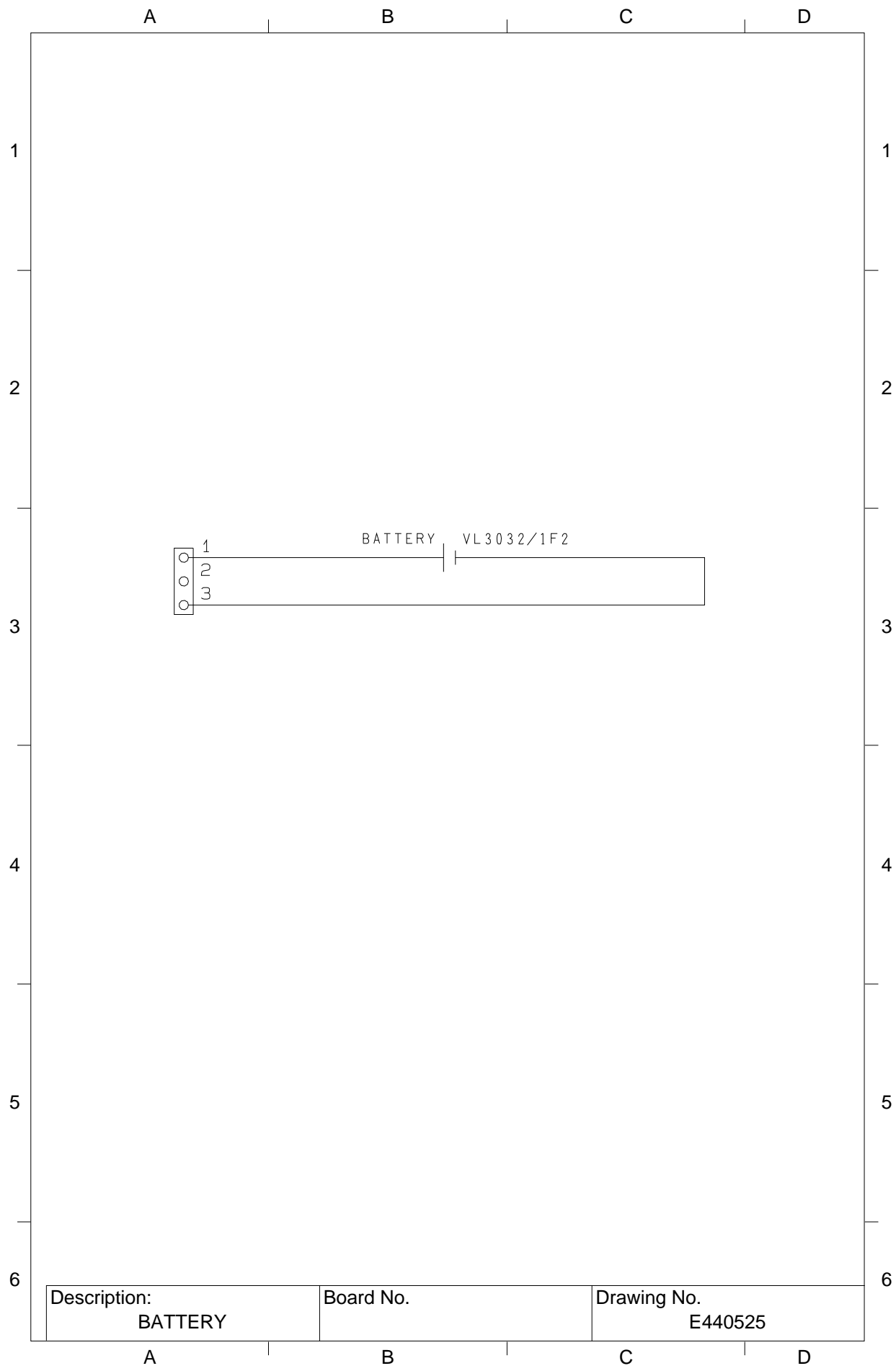
Board No.

Drawing No.
E240465









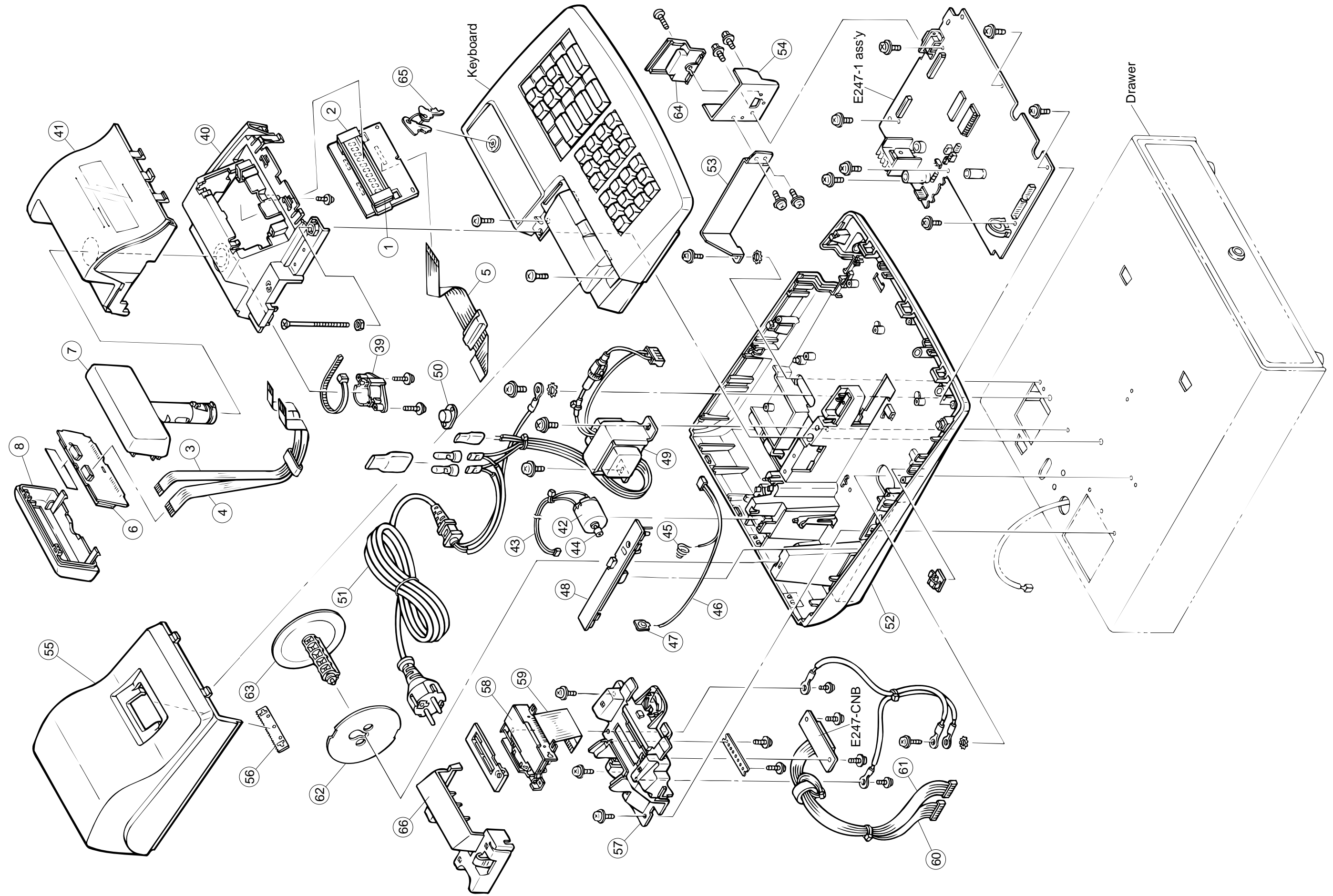
10. PARTS LIST

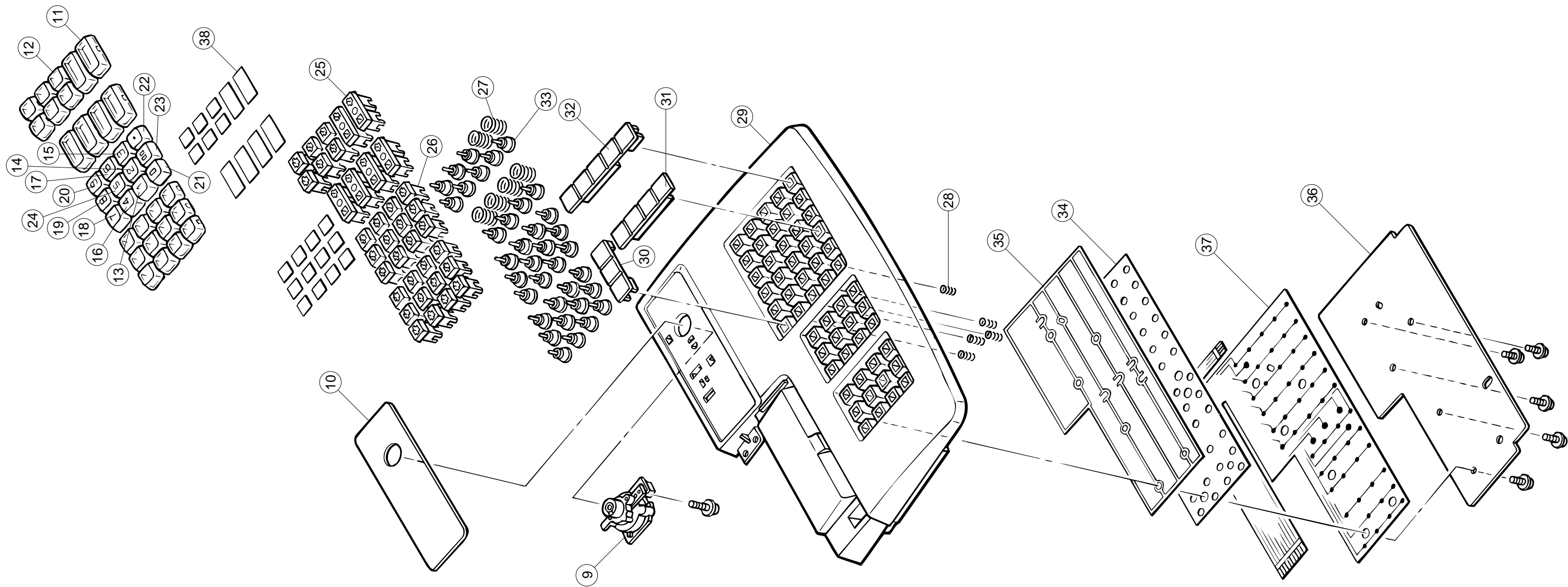
1. Main PCB block E247-1 ass'y	43
2. Main display block E247-E2-1	47
3. Customer display block E247-E2-2	47
4. Button ass'y	48
5. Upper case ass'y	48
6. Lower case ass'y	48
7. Total component	49
8. Cash drawer (DL-2763)	50
9. Printer	52

Notes:

1. Prices and specifications are subject to change without notice.
2. As for order / supply of spare parts, refer to the "GUIDEBOOK for Spare Parts Supply", a separate publication.
3. The numbers in item column correspond to the same numbers in drawing.
4. MARKS:
 - Q: Quantity used per unit
 - R: Rank
 - A: Essential
 - B: Stock recommended
 - C: Less recommended
 - X: No stock recommended

Exploded Diagram





CE-300

Item	Code No.	Parts Name	Specification	Version	Q	R
1. Main PCB block E247-1 ass'y						
	6193 4726	Main PCB ass'y E247-1	E240425*2	All countries	1	A
IC2	2006 1207	LSI	UPC16312GB-3B4		1	A
IC11	2006 1655	LSI	UPD78052GC-093-3B9		1	A
IC14	2006 1354	LSI	TMS27C512-12/15JL		1	A
IC15	2006 1319	RAM	CXK58275AP-70/10L		1	A
IC26	2101 0189	MOS IC	TC74HC138AP		1	A
IC18,	2105 1008	C-MOS IC	TC74HC00AP		3	A
IC20-21						
IC13	2105 1169	C-MOS IC	TC74HC373AP		1	A
IC17,19	2105 1218	C-MOS IC	TC74HC08AP		2	A
IC23-25	2112 0035	MOS IC	TC74HC367AP		3	A
IC27	2112 0329	Bipolar IC	MAX232N		1	A
IC4	2112 0336	Reset IC	S-80719AN-Z		1	A
IC16	2112 0406	Reset IC	S-80745AN-Z		1	A
IC1	2120 7349	Regulator IC	TL431CLPB		1	A
Q38	2210 7186	Transistor	2SB926(T,U)-AA		1	B
Q14	2230 3902	Transistor	2SD1111-AA		1	B
Q15	2230 4135	Transistor	2SD1853-AA		1	B
Q20-21,23	2230 5261	Transistor	2SD965(P.Q.R)-TA		10	B
Q25,27,29						
Q31,33,35						
Q37						
Q18,22,24	2250 0847	Digital transistor	DTC143ZS-TP		12	B
Q26,28,30						
Q32,34,36						
Q40-42						
Q3	2250 1309	Transistor	2SD1804(T)		1	B
Q4	2250 1323	Transistor	2SA933AS(QRS)TP		1	B
Q2,5,19,	2250 1330	Transistor	2SC1740S(QRSE)TP		5	B
Q39,43						
Q1	2250 1554	Transistor	2SD1063(R,S)		1	B
ZD1	2315 2661	Zener diode	RD36EB1-T1		1	B
ZD9-16	2315 2836	Zener diode	RD20EB2-T1		8	B
ZD2	2315 3109	Zener diode	RD5.6EB2-T1		1	B
ZD3	2315 3112	Zener diode	RD33EB1-T1		1	B
DB1	2315 2857	Diode stack	S2VB20		1	B
D6-8,10-29	2301 0046	Diode	1S2471 T-77-T		23	B
D9	2315 2619	Diode	1SS142-T-77-T		1	B
D38,40,	2315 2682	Diode	1SR35-100A-T-82		4	B
D49,50						
D37	2315 2864	Diode	RB721Q-T-77		1	B
D35,36	2390 0882	Schottky barrier diode	RB100AT-32		2	B
D51	2390 1967	Diode	RB441QT-77		1	B
X2	2408 8261	Ceramic oscillator	CST5.00MGW		1	B
X1	2520 3445	Crystal oscillator	C-002RX(M90-76)		1	B
DCS1	3000 7623	DC/DC converter	DCS-298		1	A
R51		Carbon film resistor	CR-25-2.2KOHMJ-T		1	X
R7		Carbon film resistor	CR-25-200OHMJ-T		1	X

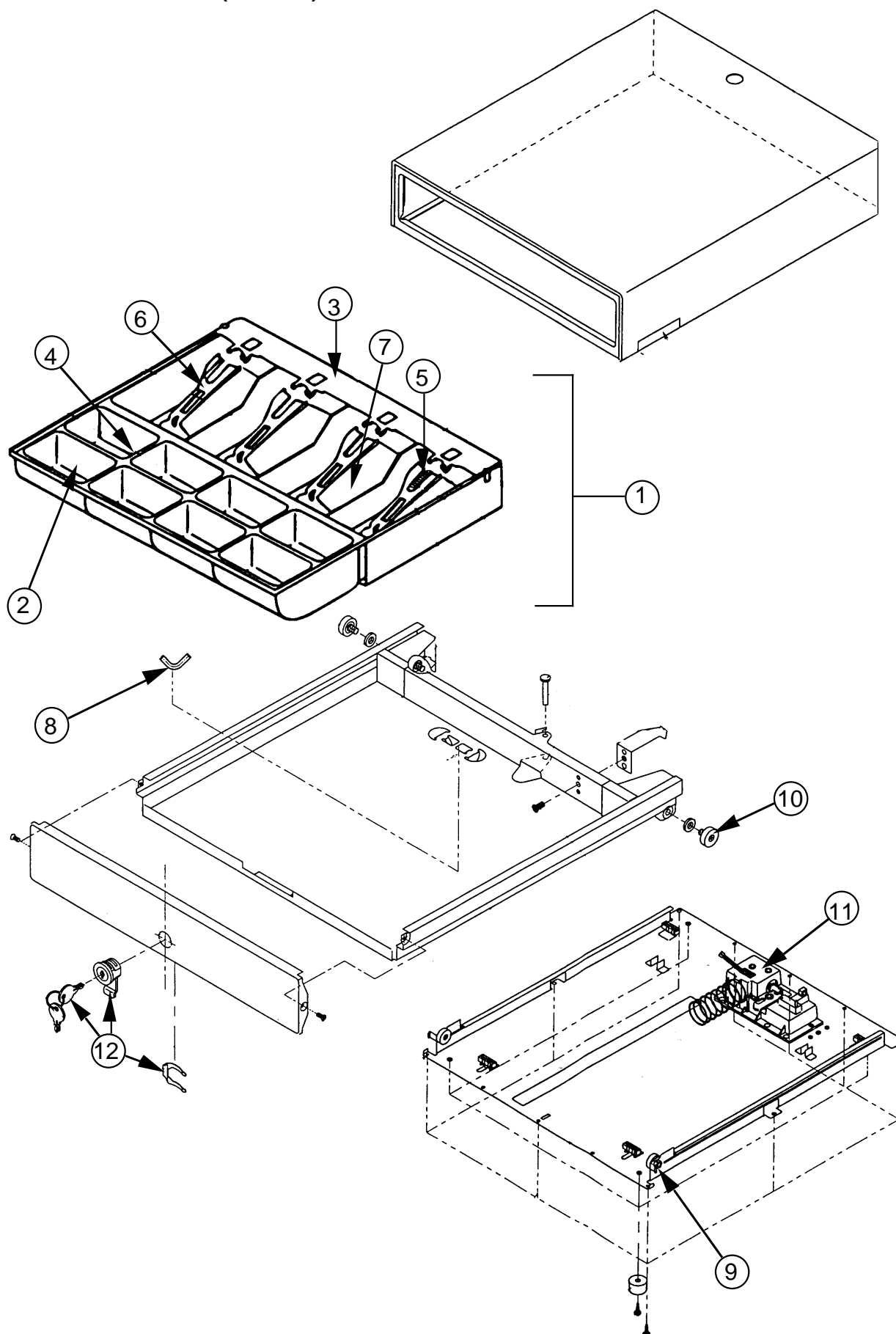
Item	Code No.	Parts Name	Specification	Version	Q	R
R10,19,43 R52-54, R84,85,94, R99,100, R103-105, R108,109, R128-131		Carbon film resistor	CR-25-100OHMJ-T		20	X
R86,111, R112,116, R118		Carbon film resistor	CR-25-1KOHMJ-T		5	X
R33,47,87		Carbon film resistor	CR-25-4.7KOHMJ-T		3	X
R6,9,11, R20,23,46 R88,89,93, R95,96,98, R106,107, R110,114, R120		Carbon film resistor	CR-25-10KOHMJ-T		18	X
R90		Carbon film resistor	CR-25-330KOHMJ-T		1	X
R44		Carbon film resistor	CR-25-1MOH MJ-T		1	X
R97,119		Carbon film resistor	CR-25-220OHM-J-T		2	X
R28		Carbon film resistor	CR-25-3.3KOHM-J-T		1	X
R13-14, R117,121, R92		Carbon film resistor	CR-25-22KOHM-J-T		4	X
R5		Carbon film resistor	CR-25-680K-OHM-J-T		1	X
R1		Carbon film resistor	R-50XT-24J101		1	X
R2		Carbon film resistor	R-50X-750-J		1	X
R3		Carbon film resistor	R-25-1.2K-G-T24-T		1	X
R16,122, R124,126, R127		Carbon film resistor	R-25-1K-G-T24-T		1	X
R17		Carbon film resistor	R-25-56K-J-T24-T		5	X
R45		Carbon film resistor				
R18		Metal film resistor	R-25-51K-J-T24-T		1	X
R48		Metal film resistor	R-25-100K-J-T24-T		1	X
R113,115		Carbon film resistor	CRH100-F11J-2R2		1	X
RA7-9,12		Carbon film resistor	CRH100-FH11J-15R		1	X
RA1		Module resistor	CR-25-470-OH MJ-T		2	X
RA13-14,16		Module resistor	RGLD8X563J		4	X
RA2,10,11, RA15		Module resistor	RGLD4X222J		1	X
		Module resistor	RGLD4X563J		3	X
		Module resistor	RGLD6X563J		4	X
C4,27		Electrolytic capacitor	RE3-10V471M-T2		2	X
C1		Electrolytic capacitor	RE3-25V472M		1	X
C36		Electrolytic capacitor	RE3-16V101M-T2		1	X
C55,69		Electrolytic capacitor	RE2-16V100MMA-T2		2	X
C68,70-72		Electrolytic capacitor	RE2-50V010MMA-T2		4	X
C40,45		Electrolytic capacitor	RE2-10V470MMA-T2		2	X
C2,23		Ceramic capacitor	RT-HE60TKYB222K		2	X
C30,52		Ceramic capacitor	RT-HE12TKYB103K		2	X
C11		Electrolytic capacitor	RE2-50V101M-T2		1	X
C28		Electrolytic capacitor	RE3-6.3V472M		1	X

Item	Code No.	Parts Name	Specification	Version	Q	R
C17-18, C26,29, C31-32, C48-51, C53-54, C56-60,64 C9 C24,35, C41-42,46, C61-63, C65-67 C38 C39 C5,12,13, C25,47		Ceramic capacitor Ceramic capacitor Ceramic capacitor Ceramic capacitor Ceramic capacitor Film capacitor	RT-HE40TKYB101K RT-HE40TKYB471K RT-DSTB90TKYR104K RT-HE40TKCH120J RT-HE40TKCH150J AMZV0050K1040200		18 1 11 1 1 5	X X X X X X
C8,37 CA1 CA7-10,12 CA2,14 CA11,13,15, CA17		CERAMIC DISC CAP Module capacitor Module capacitor Module capacitor Module capacitor	RT-HE40TKYB221K CNB6X221K CNB8X101K CNB6X101K CNB4X101K		2 1 6 2 4	X X X X X
FT1 FB3-4 F4 BZ1 CN2 CN6,7 CN3 CN4 CN13 CN16 CN17 CN14 CN1 IC14 Q1 Q1	3000 7777 3240 2089 3500 3355 3500 5845 3501 5404 3501 6244 3540 3934 3540 5081 3540 5172 3580 0693 3580 2371 3635 0024	EMI filter Ferrite beads Fuse Buzzer Pin ass'y 3P PCB connector FFC connector Connector Connector PCB connector Connector Connector Connector Connector IC socket Heat sink Screw PCB-E247-1	DSS310H-55B222M250 BL02RN2-R62-001 230.600 PKM22EPT-2001 IL-G-3P-S3T2-E B3B-PH-K-S 52045-2445 B2B-PH-K-S B10B-EH 52045-2545 ID09P33E4GX28 B7B-EH B4P-VH DILB28P-8JK OSH-3040-SPL 3X12 ZMC-3 E140198-1		1 2 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1	X X A C C C C C C C C C C X X X X X
2. Main display block E247-E2-1						
DISP1 CN1 CN3 CN2 1 2 3 4 5	2408 8226 3000 8040 3501 5404 3540 4906 3540 4913 6246 4260 6246 4270 6246 4290 6246 4300 6248 0508 4308 1298	Display tube Ferrite core FFC connector PCB connector PCB connector Display cushion A Display spacer FFC joiner B (12P) FFC joiner C (10P) FFC joiner A (23P) PCB-E278-E2	SH101MA SSC-40-12 52045-2445 52045-1045 52045-1245 E412177-1 E412178-1 E412175-2 E412175-3 E440442-1 E240025A-1		1 1 1 1 1 2 2 1 1 1 1	A X B C C X X B B B X
3. Customer display block E247-E2-2						
DISP2 CN1	2408 8233 3540 4906	Display tube PCB connector	SH1019A 52045-1045		1 1	A C

Item	Code No.	Parts Name	Specification	Version	Q	R
CN2	3540 4913	PCB connector	52045-1245		1	C
2	6246 4270	Display spacer	E412178-1		2	X
6	6246 4310	Display cushion B	E412177-2		2	X
7	6247 6469	Customer display case	E240325-1		1	C
8	6248 0515	Rear display panel	E240326-4		1	C
4. Button ass'y						
9	6192 4970	Mode key switch ass'y	E311944*1		1	B
10	6284 0844	Mode key plate	E440460-1		1	C
11	6221 3988	L cap	E210964-1		6	C
12	6221 4025	S cap	E311103-1		18	C
13	6245 7250	S button E238-1	E311792-1		1	C
14	6245 7260	S button E238-2	E311792-2		1	C
15	6245 7270	S button E238-3	E311792-3		1	C
16	6245 7280	S button E238-4	E311792-4		1	C
17	6245 7290	S button E238-6	E311792-5		1	C
18	6245 7300	S button E238-7	E311792-6		1	C
19	6245 7310	S button E238-8	E311792-7		1	C
20	6245 7320	S button E238-9	E311792-8		1	C
21	6245 7330	S button E238-0	E311792-9		1	C
22	6245 7340	S button E238-	E311792-10		1	C
23	6245 7350	S button E238-00	E311792-11		1	C
24	6245 7360	5 button E238	E311116-4		1	C
25	6246 7768	L button	E210963A-4		6	B
26	6246 7810	S button	E311101A-4		30	B
27	6247 3830	Coil spring A	E411104A-1		6	B
28	6247 3837	Coil spring B	E411104A-2		5	B
29	6247 6315	Button frame	E140119-1		1	X
30	6247 1478	Button filler 3S	E311197-2		1	C
31	6247 6343	Button filler 4S	E311265-4		1	C
32	6247 6350	Button filler 5S	E311265-5		1	C
33	6245 3530	Key contact rubber	E411877-1		36	A
34	6247 6364	Spacer	E340397-1		1	C
35	6247 6371	Common sheet	E340398-1		1	A
36	6248 0691	Keyboard chassis	E340412A-1		1	X
37	6248 0692	FPC	E240323A-1		1	A
38	6248 0843	Plate sub ass'y	E240421*3		1	X
		Screw with washer	3X8 ZMC-3		6	X
5. Upper case ass'y						
39	6220 2505	Display bush E231	E310377-1		1	X
40	6247 6455	Upper case E245	E140123-1		1	C
41	6248 0871	Display case E247B	E140124-4		1	C
		Screw with washer	3X20 ZMC-3		2	X
6. Lower case ass'y						
42	3200 3672	Motor	MXN-13FB12F		1	B
43	6191 0112	Motor connector ass'y	E311086*1		1	C
44	6231 6837	Winder rubber E222	E410716A-1		1	B
45	6000 6091	Battery spring G67	A43656-1		1	C
46	6193 3805	Battery connector ass'y	E311297A*2		1	C
47	6322 4499	Battery spring A-G55	A42606-1		1	C
48	6247 8821	Battery cover E245	E340406-1		1	C
49	3000 8001	Transformer	TE-297-E1U	Other countries	1	A
49	3000 8036	Transformer	TE-297-E2D	UK, Europe	1	A
50	3600 1046	Voltage selector	S-J2875-05	Other countries	1	X
51	3701 0242	Power cord	MP5004	UK, Other countries	1	C
51	3700 4283	Power cord	M3203	Other countries	1	C

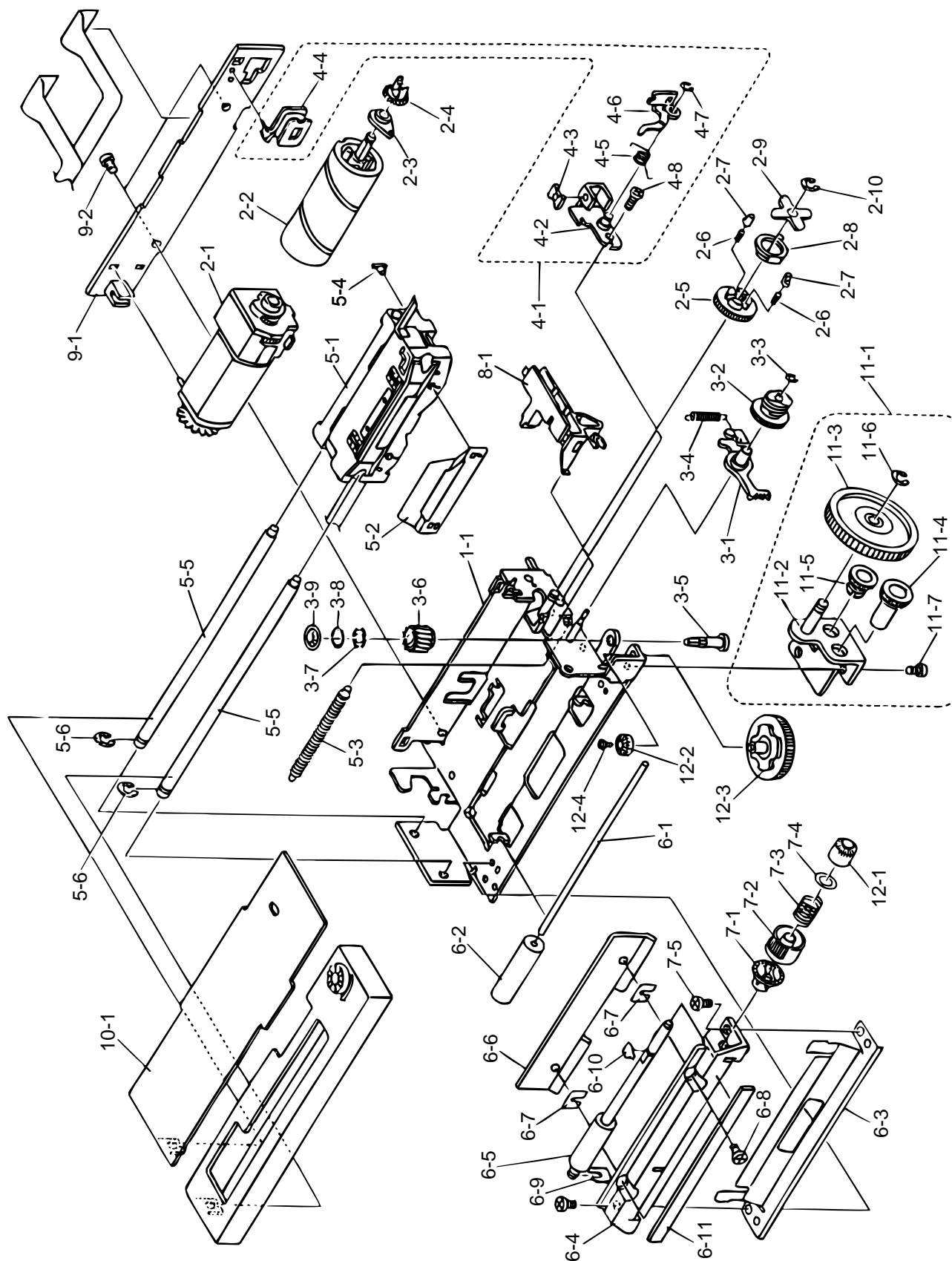
Item	Code No.	Parts Name	Specification	Version	Q	R
51	3700 4281	Power cord	PS204	Other countries Germany, Europe	1	C
51	6221 4802	Power cord	M2511		1	C
52	6248 0396	Lower case E247	E140118-4		1	C
53	6248 0779	FG plate	E340646-1		1	X
54	6248 0873	Connector fixing plate E247	E340524-1		1	X
		Screw with washer	3X8 ZMC-3		7	X
		Tapping screw with washer	4X8 ZMC-3		1	X
		Screw with washers	3X6 ZMC-3		2	X
7. Total Component						
55	6247 6483	Printer cover	E140120-1		1	C
56	6231 3668	Paper cutter	E42592A-1		1	C
57	6248 0403	Printer fixing stand block				
		Printer fixing stand	E140174-1		1	C
		Screw with washers	2X6 ZMC-3		2	X
		FG wire sub ass'y	E340653*1		1	X
58	1090 5525	Screw with washer	3X8 ZMC-3		4	X
		Printer unit	MD910SSC		1	A
59	6248 0704	FFC joiner F-E247	E440443-2		1	A
CN1	3510 7525	E247-CNB board				
		PCB connector	HBLB17S-1J		1	C
60	6248 0893	Connector sub ass'y (10P)	E340635*1		1	C
61	6248 0894	Connector sub ass'y (7P)	E340636*1		1	C
	3637 5230	Ferrite core	TR-25-15-12		1	X
62	6221 4029	Paper holding spool E227	E411393-1		1	C
63	6246 1830	Wind pulley E266	E311860-1		1	C
64	6248 0872	Connector cover E247	E340523-1		1	C
65	6248 0910	Key set sub ass'y	E312046A*2		1	A
66	6248 0298	Ribbon cover	E140175-1		1	C
	6247 8562	Dust cover E245	E240392-1		1	C
		Tapping screw with washer	4X8 ZMC-3		2	X
		Tapping screw with washer	3X8 ZMC-3		4	X
		Screw with washer	3X8 ZMC-3		1	X
		Bind screw	3X8 NI		2	X
		Screw with toothed lock washer	4 ZMC-3		4	X
		Flat screw	4X85 ZMC-3		1	X
		Flat washer	4X9X0.8 ZMC-3		1	X

8. Cash drawer (DL-2763)



Item	Code No.	Parts Name	Specification	Version	Q	R
8. Cash drawer (DL-2763)						
1	6247 9752	Cash drawer (DL-2763)	E440128A*14		1	C
2	6192 7953	Bill/Coin case ass'y	E140034*3		1	C
3	6247 3935	Coin case	E140058-1		1	B
4	6246 5230	Bill holder fixing plate	E211620-1		1	C
5	6247 3949	Coin separeter	E340173-1		6	B
6	6246 5220	Bill holder spring	E412160-1		4	A
7	6221 4902	Bill holder	ZD18931		4	A
8	6221 4911	Partition plate	ZD43652		3	B
9	6246 5030	Earth spring	E412092-1		1	C
10	5150 1643	Nut	6...		2	X
11	5500 0619	Roller	DR-19B1		4	A
12	6193 4567	Lock ass'y	E211680*9		1	B
	6221 4900	Cylinder lock	ZD20025		1	C

9. Printer (MD-910)



MD-910

N	Item	Code No.	Parts Name	Specification	Q	R
	1-1	1904 7581	Frame	NC44701-07	1	X
	2-1	1904 7582	Gear box sub ass'y	NC10701-00	1	A
	2-10,5-6	1906 2087	E-Ring,2	E60320-00	3	X
	2-2	1904 7583	Cylinder cam	NC19701-00	1	X
	2-3	1904 7584	Bushing for cam shaft	NC21201-01	1	X
	2-4	1904 7585	Paper feeding gear	NC20201-02	1	B
	2-5	1904 7586	Gear for paper feed cam	NC20202-03	1	B
	2-6	1904 7587	Spring for cotter pin	NC23602-01	2	X
	2-7	1904 7588	Pin for cotter(PLS)	NC29202-02	2	X
	2-8	1904 7589	Ring for return	NC29203-01	1	X
	2-9	1904 7590	Cam	NC29201-03	1	X
	3-1	1904 7591	Sector gear	NC20701-01	1	X
	3-2	1904 7592	Worm	NC30201-01	1	X
	3-3	1904 7593	E-Ring, 1.2	E60312-00	1	X
	3-4	1904 7594	Spring for sector gear	NC23603-03	1	X
	3-5	1904 7595	Pin for ribbon drive	NC32201-01	1	X
	3-6	1904 7596	Gear for worm	NC30202-00	1	B
	3-7	1904 7597	Latch for ribbon drive	NC33101-01	1	X
	3-8	1904 7598	Spacer for latch	NC39101-01	1	X
	3-9	1904 7599	Nut	E40520-00	1	X
	4-1	1904 7600	PF solenoid	NC25704-00	1	B
	4-2	1904 7601	Core base	NC25702-02	1	X
	4-3	1904 7602	Core for PF solenoid	NC25102-01	1	X
	4-4	1904 7603	Bobbin	NC25701-00	1	X
	4-5	1904 7604	Spring for armature	NC25601-02	1	X
	4-6	1904 7605	Armature	NC25703-00	1	X
	4-7	1904 7593	E-Ring, 1.2	E60312-00	1	X
	4-8, 9-2	1904 7607	Screw M2x2.5	E01420-025	2	X
	5-1	1904 7608	Head	NC09701-05	1	A
	5-2	1904 7609	Ribbon mask	NC14102-05	1	A
	5-3	1904 7610	Spring for head return	NC13601-01	1	B
	5-4	1904 7611	Pin for shaft	NC12001-02	1	X
	5-5	1904 7612	Shaft for carrige guide	NC02001-03	2	X
	6-1	1904 7613	Shaft for pressure roller	NC22003-01	1	X
	6-10	1904 7614	Spring for brake	NC23102-02	1	X
	6-11	1904 7615	Damper for platen	NC04102-03	1	X
	6-2	1904 7616	Pressure roller	NC22201-03	1	B
	6-3	1904 7617	Guide for paper pressure	NC23101-02	1	C
	6-4	1904 7618	Bracket for paper feed	NC24201-06	1	X
	6-5	1904 7619	Paper feed roller	NC22501-09	1	C
	6-6	1904 7620	Platen	NC04101-02	1	C
	6-7	1904 7621	Spacer for platen (0.10)	NC04103-00	2	X
	6-7	1904 7622	Spacer for platen (0.05)	NC04103-10	2	X
	6-8	1904 7607	Screw M2x2.5	E01420-025	2	X
	6-9	1904 7624	Bushing for PF bracket	NC21101-05	1	X
	7-1	1904 7625	Wheel for clutch	NC20204-03	1	B
	7-2	1904 7626	Gear for clutch	NC20203-04	1	B
	7-3	1904 7627	Spring for PF clutch	NC23601-02	1	B
	7-4	1904 7628	Spacer for clutch	NC29102-00	1	X
	7-5, 11-7	1904 7607	Screw M2x2.5	E01420-025	2	X
	8-1	1904 7630	RP switch	NC68701-00	1	A
	9-1	1904 7631	PCB terminal	NC66702-00	1	C
	10-1	1904 7632	Cover	NC44102-01	1	C
	11-1	1904 7633	Vertical manual knob	NC29701-00	1	C
	11-2	1904 7634	Bracket (V)	NC29702-01	1	X

N	Item	Code No.	Parts Name	Specification	Q	R
	11-3	1904 7635	Knob	NC20208-01	1	X
	11-4	1904 7636	Gear for PF drive	NC20209-01	1	B
	11-5	1904 7637	Gear for idler	NC20210-00	1	B
	11-6	1906 2087	E-Ring, 2	E60320-00	1	X
	12-1	1904 7638	Gear A for knob	NC20205-01	1	B
	12-2	1904 7639	Gear B for knob	NC20206-03	1	B
	12-3	1904 7640	Knob	NC20901-05	1	B
	12-4	1904 7641	Screw M1.4x3.5	E12714-035	1	X

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